S. HRG. 100-799 PT. 3

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT AND CERTAIN INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1989

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

SECOND SESSION

ON

H.R. 4800

AN ACT MAKING APPROPRIATIONS FOR THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT AND FOR SUNDRY INDEPENDENT AGENCIES, BOARDS, COMMISSIONS, CORPORATIONS, AND OFFICES FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1989, AND FOR OTHER PURPOSES

PART 3 (Pages 1217-1921)

NONDEPARTMENTAL WITNESSES

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DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT-INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1989

MONDAY, MAY 9, 1988

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:03 a.m. in room SD-124, Dirksen Senate Office Building, Hon. Pete V. Domenici presiding.

Present: Senators Proxmire, Domenici, D'Amato, and Mikulski.

NONDEPARTMENTAL WITNESSES

OPENING REMARKS

Senator DOMENICI [presiding]. This subcommittee will please come to order.

The distinguished chairman, Senator Proxmire, asked me to preside this morning. So, I will do my best.

Today, we are going to hear public witnesses regarding the proposed budget requests for the National Aeronautics and Space Administration, the National Science Foundation, the Veterans Administration, the Selective Service System, and the Environmental Protection Agency.

I would like you all to keep in mind that we in Congress are operating under very severe budgetary pressures. If you recommend increased funding for a program, it would be helpful if you would suggest where the added funds might come from, particularly if you are proposing more than the President has recommended.

I would like to go over the procedures with you because there are a number of witnesses. I would ask that you keep your presentations to no more than 4 minutes; when 1 minute is left, the yellow light will come on; and when time is up, the red light will turn on.

I am going to call you up in panels of four or five. Our first panel will be Mr. Bruce Goldwater, Mr. Roger H. Hildebrand, Dr. John Clark, and Dr. Norris Krone, on the National Aeronautics and Space Administration budget.

Please proceed to the witness table. We will hear first from Mr. Bruce Goldwater, vice president and general manager of Stirling Engine Systems Division of Mechanical Technology, Inc.

Please proceed, Mr. Goldwater.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

STATEMENT OF BRUCE GOLDWATER, VICE PRESIDENT AND GENERAL MANAGER, STIRLING ENGINE SYSTEMS DIVISION, MECHANICAL TECHNOLOGY, INC.

SPACE POWER STIRLING ENGINE PROGRAM

Mr. GOLDWATER. Thank you very much, Mr. Chairman. I appreciate the opportunity to appear before you today to discuss our NASA-sponsored space power Stirling engine program.

The free-piston Stirling engine under development at MTI since 1975 has the potential to significantly improve space power to weight ratios against other competing power conversion technologies. The improved power-to-weight ratio will dramatically reduce the total cost of anticipated Pathfinder missions in Earth orbit, on the Moon, or on Mars.

Both nuclear and heat generation systems greatly benefit from the availability of Stirling engine technology. I am asking this committee to fully support the Pathfinder integrated technology program requested by NASA at the appropriate funding levels to develop both the power source and the power conversion system.

Major advantages of Stirling engines for space power continue to be shown—high efficiency, the potential for extremely long life, and compatibility with nuclear or solar space power systems. The Stirling cycle is the most efficient thermodynamic heat engine cycle that exists today.

Long life and high reliability are inherent in the free-piston design feature. It is uniquely suited to either nuclear or solar energy conversion since it operates through a transfer of heat applied externally to the engine.

Because it can operate over a wide range of applied temperatures, either a high-temperature or low-temperature reactor source can power the engine. For the solar-powered application, a 20-percent weight improvement over other dynamic systems and better than 40-percent weight improvement over static photovoltaics has been shown.

Nuclear-power system studies indicate that the Stirling system, operating at the same temperature as the proposed SP100 thermoelectric power conversion system, can provide 55 percent greater power with one-half the total radiated area.

These significant improvements in weight and area make free-piston Stirling engine systems an extremely attractive option to mission planners because of the high costs associated with launching mass from the Earth.

For example, it has been shown that savings of over $3 billion can be realized for 100 kilowatt lunar-based missions. In 1983, NASA recognized free-piston Stirling engines could provide a core technology for advanced space power systems and aggressively pursued a demonstration program. This program has essentially demonstrated at design operating conditions all the major goals required by NASA.

The Lewis Research Center has recently issued a request for proposal for the development of the next generation space Stirling engine. This technology program is consistent with the overall effort to develop high-capacity power for the civilian space technology initiative.

INSUFFICIENT FUNDING

The proposed schedule, described in my written testimony, to accomplish this Stirling engine technology program is very ambitious, and I must emphasize to this committee that the funding allocated for this program is not sufficient.

Considering the substantial mission and cost payoff that success would bring, it would appear that a much more aggressive program is in order. The projected total funding of $30 million over the 5-year program is considered minimal.

Increased funding would reduce the technical risk and increase the chance of success.

In conclusion, the feasibility of Stirling technology for a power conversion system for space applications continues to be demonstrated. Every major space system contractor concurs with NASA's assessment that the Stirling space power engine represents the future power system for the United States.

Without a well-funded, success-oriented technology program, the technology will not be available when it is needed; and as such, will not an option for missions planned in the late 1990's. With the appropriate funding, a successful program can be achieved within the timeframe needed to ensure the projected benefits.

Mr. Chairman, I want to also reemphasize the need for this committee's support of the NASA Pathfinder budget request and hope that you will support NASA in the achievement of the space power goals. I would be happy to answer any questions. Thank you.

Senator DOMENICI. Thank you very much. Your statement is longer than what you have read, is it not?

Mr. GOLDWATER. My written testimony? Yes.

Senator DOMENICI. All right, it will be made a part of the record.

Mr. GOLDWATER. Thank you.

[The statement follows:]

STATEMENT OF BRUCE GOLDWATER, VICE PRESIDENT AND GENERAL MANAGER, STIRLING ENGINE SYSTEMS DIVISION, MECHANICAL TECHNOLOGY, INC.

Members of the Committee: I am Bruce Goldwater, Vice President of Mechanical Technology Incorporated (MTI) and General Manager of our Stirling Engine Systems Division. MTI is a high-technology organization employing nearly 1000 people in the areas of energy conversion, quality control, turbomachinery, and aerospace and defense technologies. Our revenues are approximately $90 million annually, derived from the commercial and government sectors. Three quarters of these revenues comes from the sale of commercial products and services, while the remainder comes from R&D contracts.

I appreciate the opportunity to appear before you today to discuss our NASA-sponsored Space Power Stirling Engine Program. We are proud to be a member of the technology team dedicated to the development of advanced power systems for space applications and fully support the NASA Pathfinder initiative. The free-piston Stirling engine, under development at MTI since 1975, has the potential to significantly improve space mission power-to-weight ratio against other competing power conversion technologies. Improved power-to-weight ratio will dramatically reduce the total cost of anticipated Pathfinder missions in Earth orbit, on the Moon, or on Mars. Success in this technology program can lead to a wide variety of space power applications, including growth versions of the SP-100 power system and advanced dynamic conversion systems for the manned space station. As such, both nuclear and solar heat generation systems greatly benefit from the availability of Stirling engine technology. I am asking this Committee to fully support the integrated technology program requested by NASA at the appropriate funding levels to develop both the power source and power conversion system.

Today, I will be discussing the significant advantages of free-piston Stirling engines for space power, the progress that has been achieved under NASA direction in the recent past, and the technology development required to realize the full potential of free-piston Stirling engines.

Major advantages of free-piston Stirling engines for space power continue to be shown: high efficiency, the potential for extremely long life, and compatibility with nuclear or solar space power missions. The Stirling cycle is the most efficient thermodynamic heat engine cycle that exists today. Long life and high reliability are inherent in the design features of free-piston Stirling engines, owing to dynamic balance, a limited number of moving parts, dynamic components operating on gas bearings which eliminate wear, no rubbing seals, and a system that can be hermetically sealed.

The Stirling engine operates from a heat source that is applied externally. Therefore, it is uniquely suited to either nuclear or solar energy conversion, since it operates through a transfer of heat to the engine. The Stirling engine converts heat directly to electricity because it is hard coupled to a linear generator. Similarly, because it can operate over a wide range of applied temperatures, either a high-temperature or low-temperature reactor source can power the engine.

Advantages of the free-piston Stirling system in total system weight and area for a solar-powered system are shown in Figure 1. This figure shows a 20% weight improvement over other dynamic systems and better than 40% weight improvement over static photovoltaics. Proposed solar receiver/engine integration is shown in Figure 2. As illustrated in Figures 3 and 4, studies of a nuclear power system indicate that the Stirling system operating at the same temperature as the proposed SP-100 thermoelectric power conversion system can provide 55% greater power with one half the total radiator area. The baseline SP-100 nuclear configuration using Stirling engines is shown in Figure 5. These significant improvements in weight and area make free-piston Stirling engines an extremely attractive option to mission planners because of the high costs associated with launching mass from Earth.

Technology Status

A key demonstration of free-piston Stirling engine potential for space power applications was achieved as part of NASA's Space Power Demonstrator Engine (SPDE) Program. In 1983, NASA recognized that free-piston Stirling engines could provide a core technology for advanced space power systems and aggressively pursued a demonstration program. The SPDE program has demonstrated full design operating conditions and has achieved 25-kW engine power (versus 28.8-kW goal) while producing 17 kW of electrical power. Excellent dynamic balance of less than 0.001 in. has been shown, which is necessary in an operating spacecraft. With appropriate material substitution for the space application, the SPDE specific power goal of 8 kg/kW has been easily achieved. In concert with hardware development, significant progress has been made in the development of the analytical codes needed to predict engine system performance and validate design methods. We have obtained excellent data correlation of the SPDE tests with analytical predictions and are confident that the design tools for the next-generation space engine are already available.

As an important part of the program, within the last year, a research version of the SPDE (shown in Figure 6 and as tested at MTI in Figure 7) has been delivered to NASA-Lewis Research Center. This engine module was installed in a test cell and is currently fully operational. The goal is to expedite the technology development by using two test beds. Test development plans are closely coordinated between NASA and MTI to accomplish this goal.

Recently, MTI has demonstrated an improved gas bearing system over the full piston stroke range and at operating conditions. The improved gas bearing system will increase reliability, reduce engine complexity, and improve system efficiency while maintaining the long life required for a space power mission. We have also designed a high-temperature heat pipe heat input system that will interface with the existing engine. Improved linear alternators for the engine are under test and we fully expect to demonstrate a 90% efficiency level.

Programmatic Needs

NASA-Lewis Research Center has recently issued a request for proposal for the development of the next-generation space Stirling engine and the necessary technology to bring the Stirling engine to technology readiness. The technology program is consistent with the overall effort to develop high-capacity power for the Civilian Space Technology Initiative (CSTI). MTI fully supports the goals and objectives of both CSTI and Pathfinder and a return of the United States to a strong and active technology leadership role in space.

Key technology goals for the Stirling technology program have been identified as follows:

1. Demonstrate performance of a single-cylinder, balanced engine at 1050 K heat input temperature, including 25 kWe, greater than 25% efficiency, and less than 6 kg/kWe by the end of FY 1992.

2. Establish technology feasibility of a 1350 K input temperature heat-pipe system, hydrodynamic bearings, materials joining, and high-efficiency generators by the end of FY 1992 in an engine system.

3. Complete the preliminary design of the 1350 K engine by the end of FY 1992.

Critical technologies needing further advancement and necessary to support the successful accomplishment of the above milestones include:

- Space configuration heat exchangers
- High-temperature alternators
- Hydrodynamic gas bearings
- Low-creep, high-temperature materials
- Noncontacting seals.

The key thrust of the Space Stirling Engine Program will be the development of a 1050 K hot-side, free-piston Stirling Space Engine (SSE). This 1050 K engine will be the first Stirling engine designed for space. It will incorporate the advanced technology being developed in parallel within the program. The four major program elements are:

1. Design and develop the Stirling Space Engine (1050 K)
2. Advance specific technologies that are required to support the SSE design and development activity
3. Maintain a reference engine design directed at the final space engine operating conditions for both solar and nuclear heat input options
4. Develop advanced technologies required to maintain a high level of reference engine design credibility.

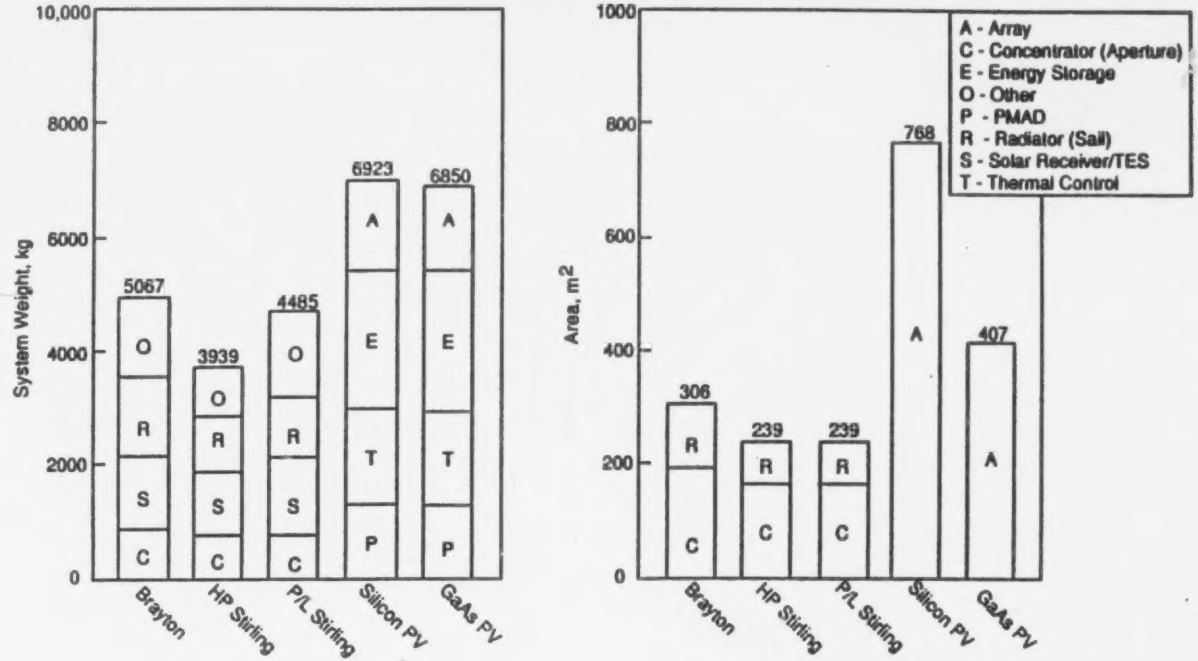
The proposed schedule to accomplish this ambitious program is shown in Figure 8.

MTI fully supports the program logic outlined by NASA and the overall initiative in developing and implementing an advanced Stirling technology program for space power. However, I must emphasize to this Committee that the funding allocated for this specific part of the program is not sufficient. Considering the substantial mission and cost payoff that success would bring, it would appear that a much more aggressive program is in order. The projected total funding is $30 million over the five-year program plan, or approximately $6 million per year. This is considered a minimal program and increased funding would reduce the technical risk as well as increase the chance of success. Additional funds are also needed to support advanced linear alternator technology and higher temperature materials technology.

In conclusion, the feasibility of Stirling technology for a power conversion system for space applications continues to be demonstrated. Every major space system contractor concurs with NASA's assessment that the Stirling space power engine represents the future power system for the United States. Without a well-funded, success-oriented technology program aimed at achieving substantial gains in power-to-weight capability, the technology will not be available when it is needed and, as such, will not be an option for missions being planned in the late 1990s. Experienced contractors and a management team are in place and ready to proceed. With the appropriate funding, a successful program can be achieved within the time frame needed to ensure the projected benefits.

We appreciate this opportunity to present the status of free-piston Stirling technology to this Committee and hope that you will support us in the achievement of the space power goals.

35-kWe SOLAR POWER SYSTEMS
— SYSTEM WEIGHT AND AREA —

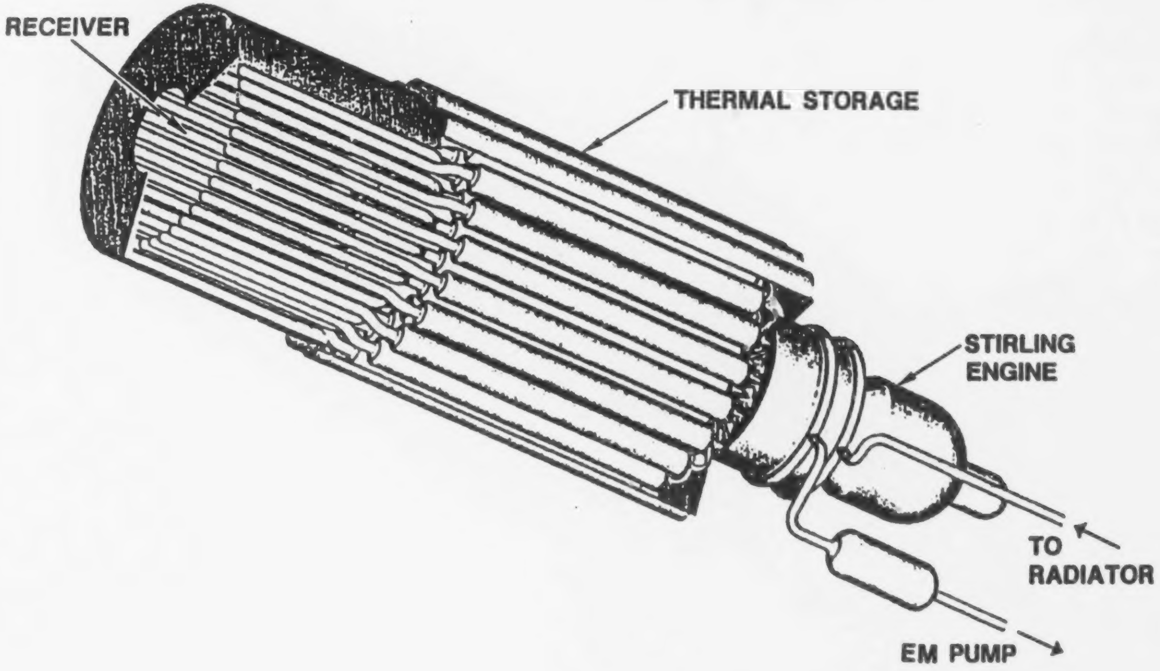


HP = Heat Pipe
P/L = Pumped Loop

Ref.: *Solar Dynamic Power System Definition Study.*
NASA Contractor Report 180877, March 1988

Figure 1

35-kWe HEAT PIPE STIRLING ENGINE/SOLAR RECEIVER

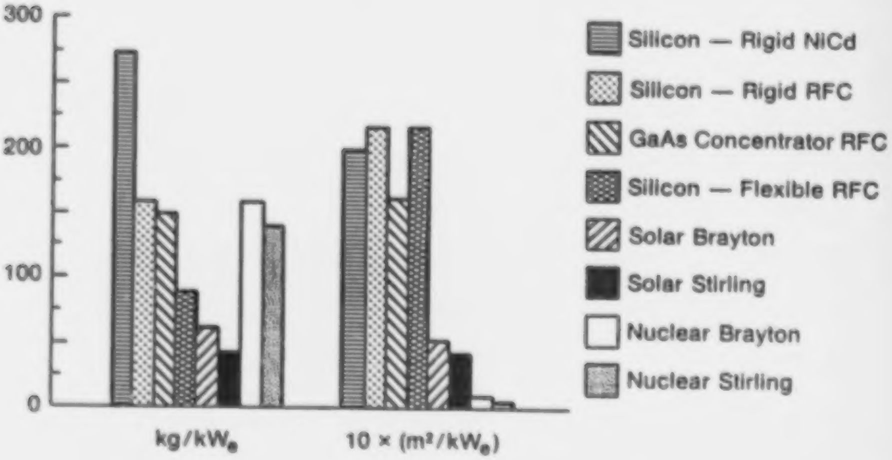

RECEIVER
THERMAL STORAGE
STIRLING ENGINE
TO RADIATOR
EM PUMP

Ref.: *Solar Dynamic Power System Definition Study.*
NASA Contractor Report 180877, March 1988

Figure 2

SPECIFIC MASS AND AREA OF SEVERAL SPACE STATION POWER SYSTEMS

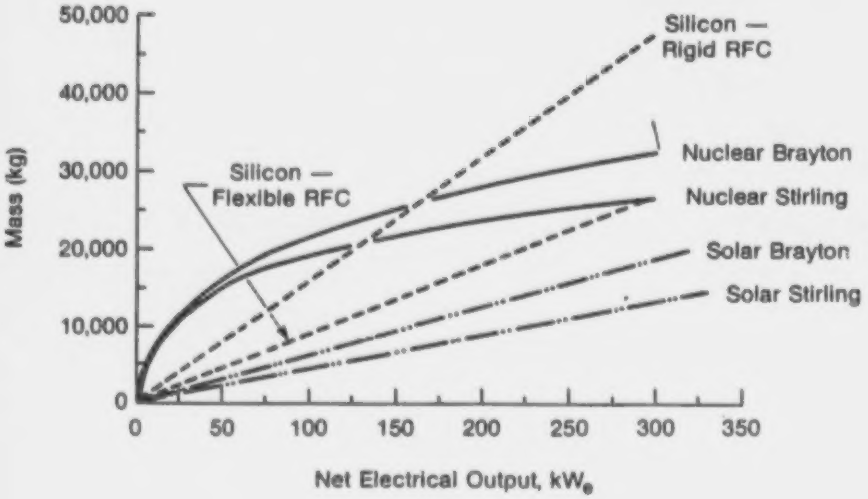
Net Power Output = 150 kW_e



Source: NASA PIR #71

Figure 3

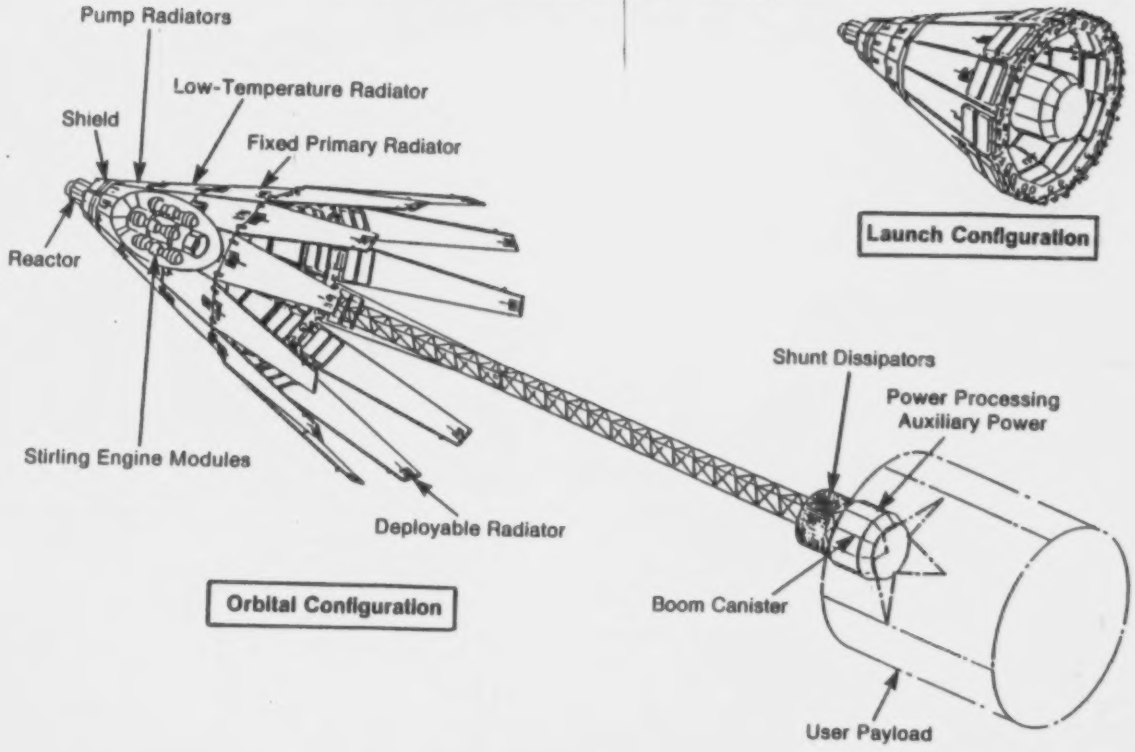
TOTAL SYSTEM MASS FOR POTENTIAL SPACE STATION POWER SYSTEMS



Source: NASA PIR #71

Figure 4

BASELINE CONFIGURATION
— SYSTEM DESCRIPTION —


Pump Radiators
Low-Temperature Radiator
Shield
Fixed Primary Radiator
Reactor
Launch Configuration
Shunt Dissipators
Power Processing
Auxiliary Power
Stirling Engine Modules
Deployable Radiator
Orbital Configuration
Boom Canister
User Payload

General Electric Co.

Figure 5

SPACE POWER DEMONSTRATOR ENGINE

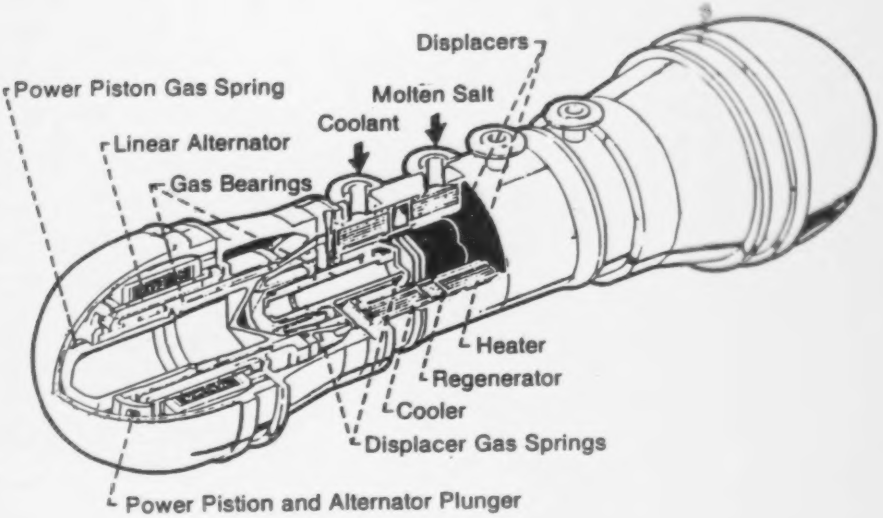

Displacers
Power Piston Gas Spring
Molten Salt
Coolant
Linear Alternator
Gas Bearings
Heater
Regenerator
Cooler
Displacer Gas Springs
Power Pistion and Alternator Plunger

Figure 6

SPDE ENGINE ON TEST

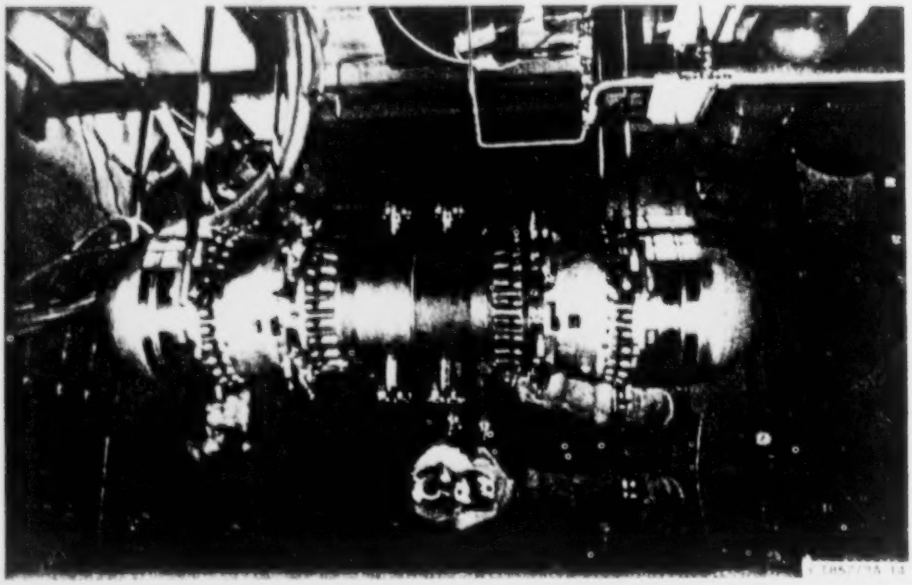
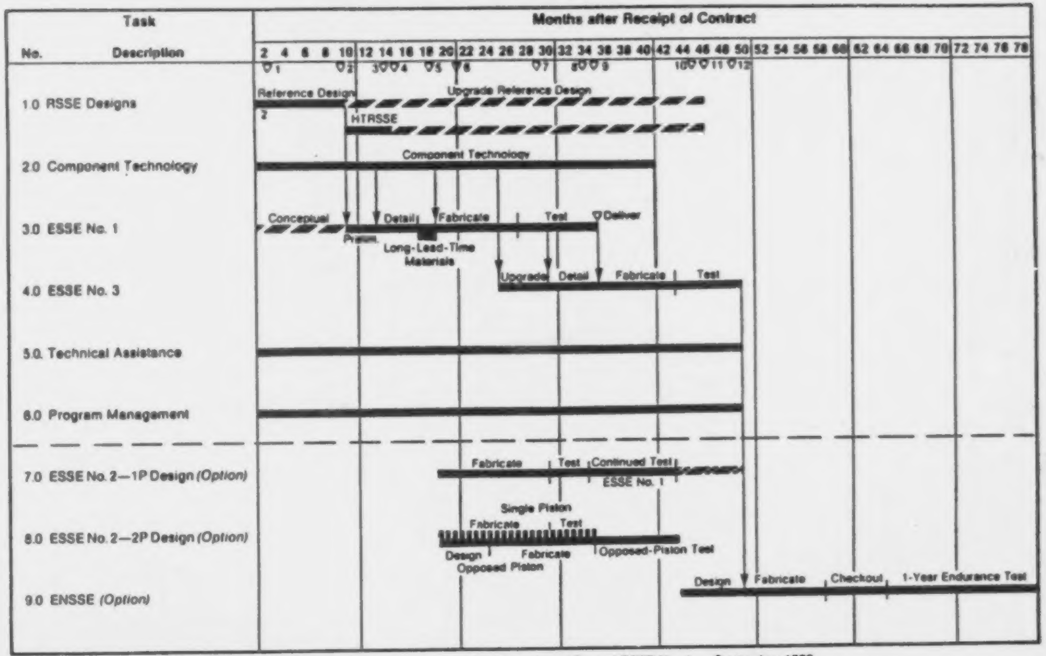


Figure 7

SPACE STIRLING ENGINE PROGRAM
— OVERVIEW SCHEDULE —



1. Initial Technology Assessment — June 1988
2. RSSE Design Review — January 1989
3. Complete Evaluation of SPRE Heat Pipe — June 1989
4. HTRSSE Design Review — June 1989
5. Detail Design Review of ESSE No. 1 — October 1989
6. Demonstrate Heat Pipe SPRE — December 1989
7. Initiate Acceptance Test of ESSE No. 1 — September 1990
8. Complete Upgrade Design for ESSE No. 3 — February 1991
9. Deliver ESSE No. 1 to NASA — March 1991
10. Initiate Acceptance Test of ESSE No. 3 — January 1992
11. HTRSSE Design Review — February 1992
12. Demonstrate Program Goals — May 1992

Figure 8

STATEMENT OF ROGER HILDEBRAND, CHAIRMAN, DEPARTMENT OF ASTRONOMY AND ASTROPHYSICS, UNIVERSITY OF CHICAGO, ON BEHALF OF THE SPACE SCIENCE WORKING GROUP OF THE ASSOCIATION OF AMERICAN UNIVERSITIES AND THE NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

OFFICE OF SPACE SCIENCE AND APPLICATIONS

Senator DOMENICI. We will now hear from Mr. Roger Hildebrand, chairman of the Department of Astronomy and Astrophysics, University of Chicago, representing the Space Science Working Group.

Please proceed.

Mr. HILDEBRAND. Mr. Chairman, I appreciate the opportunity to come here to talk about the 1989 budget for NASA. I am testifying on behalf of the Space Science Working Group of the Association of American Universities.

There are just two points in my written statement that I would like to emphasize. They both have to do with the Office of Space Science and Applications.

The first is that, in my opinion, this is the first year for several years when that Office has put together a plan for research and development that is realistic and coordinated and designed to provide some continuity. We now have clear decisions about new starts, and we have some confidence that when things do start, they will keep moving.

And where it is appropriate, we have alternatives to reliance on the space shuttle.

SPACE SCIENCE IN UNIVERSITIES

The second point I want to emphasize is the importance of maintaining space science in our universities. I have in mind both the infrastructure and the opportunities for new science through small and medium-sized missions.

As examples of such missions, I would give the Explorer class missions, which I think are now conceived, but also the suborbital programs, such as the rockets—where we are falling behind the Japanese—and the balloons—where we are making a good recovery after a considerable period of failure, and airborne astronomy in the stratosphere, where the United States has the best program in the world and plans to maintain leadership.

These programs produce some superb science. They produce our young scientists and engineers and they produce a lot of innovative technology. You can afford to be innovative when you have relatively frequent opportunities and relatively low cost.

These opportunities and this continuity are what the universities need to do their job in research and training.

TURNAROUND IN SPACE SCIENCE AND APPLICATIONS

To summarize my remarks, first, I think things have turned around in space science and applications. They have always had some good people, but now they have some leadership. Second, I have emphasized the importance to NASA's overall program of maintaining research and training in universities.

I want to express my support for the program and urge that research and analysis show real growth in 1989 and 1990. I would be happy to answer questions.

Senator DOMENICI. Thank you very much.

[The statement follows:]

STATEMENT OF ROGER H. HILDEBRAND, CHAIRMAN, DEPARTMENT OF ASTRONOMY AND ASTROPHYSICS, UNIVERSITY OF CHICAGO, REPRESENTING THE SPACE SCIENCE WORKING GROUP

Mr. Chairman, Members of the Subcommittee, thank you for this opportunity to present the views of the Space Science Working Group on the subject of NASA's FY 1989 budget request. This testimony reflects the views of Association of American Universities and the National Association of State Universities and Land-Grant Colleges, whose members represent most of the major research universities in the United States.

THE PRESENT CRISIS

For many years the United States led the world in the space sciences. Our achievements provided a highly visible demonstration of this nation's scientific and technological prowess. In the last few years, however, and particularly since the Challenger accident, this lead has eroded. In some fields of space science this country is in danger of becoming a bystander.

The last American planetary mission launch was ten years ago. The Soviet Union, meanwhile, has pursued a vigorous program of exploration of Venus and has announced an ambitious and technologically challenging series of missions to Mars. Two years ago Comet Halley was visited by probes from the Soviet Union, Europe, and Japan, but none from this country. In the Earth sciences, France and the Soviet Union are distributing land remote sensing data superior in resolution to that obtained with U.S. civil satellites. In X-ray astronomy, West Germany, the Soviet Union and Japan contributed to critical spacecraft observations of X-rays from Supernova 1987a, but unfortunately, the U.S. had no operating capability to make these pioneering measurements.

The decline in the health of U.S. space science can be measured in ways beyond the hiatus in the launching of new missions. As research and analysis budgets for the space sciences have lost ground to inflation, research groups have found it increasingly difficult to remain viable. This is particularly true at the universities, which have traditionally provided the backbone for space science research in this country. Universities are a major source of new scientific theories and new ideas for spacecraft instruments. Equally importantly, is the fact that universities are the principal source of new scientific talent, through the training of graduate students and postdoctoral researchers. The declining opportunities in the space sciences have posed serious obstacles to attracting and retaining the best young scientific minds. As a result, the generation of young space scientists who will conceive and carry out the next set of scientific missions is dangerously underpopulated.

In its testimony to Congress last year, the SSWG maintained that this nation must take deliberate action if we are to return U.S. space science to a position of preeminence. The SSWG presented four overarching issues that must be addressed to resolve the present crisis: (1) frequent and assured access to space for scientific exploration, (2) the vitality of the space science infrastructure, particularly at universities, (3) the timely development of advanced technologies, and (4) the continuing pursuit of new science.

We are pleased to see that the proposed FY 1989 NASA budget contains provisions to address each of these issues.

THE PROPOSED FY 1989 NASA BUDGET

The present mission plan of the Office of Space Science and Applications includes a balanced mix of Space Shuttle and expendable launch vehicle (ELV) launches. The proposed FY 1989 NASA budget continues funding for Delta II launch vehicles for the Extreme Ultraviolet Explorer and the West German Roentgen Satellite (ROSAT) and initiates funding for a Titan IV for a planetary mission and a Titan III for Mars Observer or a Tracking and Data Relay Satellite. The budget also provides funding to initiate competitive procurement of intermediate-size boosters for the Global Geospace Science missions and of Scout-class ELVs slated to be launched at a rate of two per year as part of the Explorer program starting in FY 1991. The planned sequence of frequent, moderate size, Scout-class missions is particularly welcome, because it will provide many opportunities for new instruments, focused studies, and rapid responses to new phenomena. The Antarctic ozone hole and supernova 1987a are particularly vivid recent examples of scientifically compelling new phenomena that call for critical experiments to be carried out from space with a minimum of delay.

The principal NASA support for most university space scientists comes from the Research and Analysis (R & A) programs. As noted earlier, level or declining budgets for these programs in recent years have led to a substantial erosion in the ability of the space science community to conduct research and, at the universities, to attract graduate students and new scientists to the field. We are therefore pleased to note that the proposed FY 1989 NASA budget contains some increase in funding for R & A. Much of this increase, however, is designated for science-related facilities or for technology development for future missions. While the need for funding in these areas is genuine, the net increase in R & A funds available for space science research at the universities will be small. It is critical that the R & A programs show real growth in the FY 1990 NASA budget.

The development of advanced technologies provides the critical new instrumentation for the efficient planning and execution of new missions. New technologies, of course, also contribute to the nation's technological competitiveness. The proposed FY 1989 NASA budget includes significant development funds for the planned planetary missions to volatile-rich objects in the outer solar system, including a comet rendezvous and a Saturn orbiter with a Titan atmospheric entry probe, and for the Earth Observing System, a future cornerstone of NASA efforts in the area of Earth remote sensing. Timely development of long-lead instrumentation and spacecraft components will permit these missions to be brought forward as new start candidates in the near future. The funds requested to support agency planning for further exploration of the Moon and Mars are important to assure that well-formulated scientific questions will be among the objectives of these initiatives.

The proposed FY 1989 NASA budget contains support for several key areas of new science. Initiation of a set of facilities for materials science and basic physics and chemistry in a microgravity environment on the space station, development of the centrifuge for life science studies, and planning for the initiatives in space biology and in extended duration crew operations are all welcome components of the FY 1989 program. An exciting element of new space science is the Advanced X-ray Astrophysics Facility (AXAF).

The SSWG strongly endorses the proposed FY 1989 new start for AXAF. A new start in the budget demonstrates the nation's renewed ability to undertake challenging and pioneering space initiatives and to plan for an orderly series of space science missions for the mid 1990s. The new start for AXAF, in particular, is the culmination of a nearly decade-long effort to bring forward the recommendation of the National Academy of Sciences (NAS) Astronomy Survey Committee Report on "Astronomy and Astrophysics for the 1980s," in which a new start for AXAF was the highest priority objective for astronomy and astrophysics. AXAF will revolutionize our understanding of many of the most fundamental questions dealing with the origin and evolution of the universe by virtue of the hundred-fold increase in sensitivity and thousand-fold increase in spectroscopic capability over any previous or planned X-ray mission. X-ray astronomy is a field that was initiated by U.S. investigators, but one which lately has been dominated by the successful space science programs of Japan, Europe, and the Soviet Union. With AXAF, U.S. leadership in this important field of astrophysics will be finally restored.

SUMMARY

With the proposed FY 1989 budget, NASA has taken a significant first step in implementing a long-term plan that will return this nation's program in space science to one of vision and vitality. The plan is responsive to the recommendations of NASA and NAS scientific advisory committees. The FY 1989 budget is carefully crafted to achieve a balance among support for ongoing programs, diversification of the launch vehicle fleet for space science missions, increased support for advanced technology development and for research and analysis, and new initiatives in microgravity and life science and in X-ray astrophysics. With this budget NASA has recognized the ongoing crisis in the space sciences and has set out on the road toward restoring U.S. leadership in space.

Thank you for the opportunity to provide you with this testimony.

STATEMENTS OF DR. JOHN CLARK AND DR. NORRIS KRONE, AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

Senator DOMENICI. Our next witnesses will be Dr. John Clark and Dr. Norris Krone, representing the American Institute of Aeronautics and Astronautics.

Dr. CLARK. Thank you very much, Senator Domenici. I am John Clark. I am sure you know what the AIAA is, and I would appreciate it if you would enter our written testimony in the record. I will just summarize it so we will have time for questions.

Senator DOMENICI. It will be made a part of the record.

Dr. CLARK. Thank you, sir. We are very much aware of and deeply concerned, as you are, with the present fiscal climate of this nation. However, federal investments in civil aerospace make a vital contribution to our future economic competitiveness, international leadership, national security, creation of productive jobs, and a renewal of this nation's pride.

I think the important thing here is that economically a vigorous program will more than pay for itself, while assuring American leadership in exploring the space frontier for the benefit of all.

Unfortunately, the administration's 1989 budget is not a lavish proposal. Unfortunately, it is just barely adequate to maintain current capabilities, lay the groundwork for essential future developments, and then try to get us back to where we were before the *Challenger* disaster.

In attempting to provide some guidance in the necessary choices that must be made, we would suggest that you keep in mind three overriding concerns.

THREE OVERRIDING CONCERNS

We urgently need to improve and enlarge our technology base, which is the foundation of future capabilities. Your first speaker addressed a very important portion of this, and we totally concur.

A second overriding concern is completion of current programs in both science and infrastructure development, which must take precedence over the introduction of new programs. I think our associate administrator, Lynn Fisk, as our second speaker, has commented quite appropriately; we fully support this, has set for a very intelligent set of priorities and a program which is designed to effectively get the biggest bang for the buck in the area of space science and also gives precedence to completing important programs which have already been started in order to save time and dollars and achieve maximum results.

Finally, the main cost drivers are technology development and operations. So, any reductions in nonrecurring development costs early in the program ought to be avoided.

HIGHLIGHTS OF SPACE TRANSPORTATION

In just touching on the highlights of space transportation, we strongly support the mixed fleet; we went too long without it, that is, a mix of ELV's and STS. On the space station, we would urge taking advantage of the cost savings associated with long-term commitment.

It has been especially devastating to a development program to withhold funding within a budget year, as opposed to deciding what we are going to do and then going out and doing it with long-term funding.

On space science, I couldn't concur more with the importance of the Scout Explorer Program and suborbital program for short-term, inexpensive means of doing jobs which are within the time scope of graduate studies.

The Advanced X-Ray Astrophysical Facility is the cornerstone of NASA's space science program in this area. It has been the highest priority mission for many years. Its adoption will reassert this nation's preeminence in this field.

We are delighted to see the administration's support of the civil space technology initiative, particularly Pathfinder; the ACTS communications satellite R&D effort should continue.

I would like to ask Dr. Krone to pick up at this point in telling us a bit about the aeronautics views of AIAA.

Senator DOMENICI. Please proceed, Doctor.

AIAA'S AERONAUTICS VIEWS

Dr. KRONE. Yes, sir; thank you. The AIAA is dedicated to support of the aeronautical sciences; and in this regard, we feel very strongly that aeronautics in the country is critical to the economic well-being as well as the security of the nation.

The fundamental reason for the strength of our current aeronautics industry is the products that we sell—quality as well as performance—and we believe that the technology programs that existed in the pre-1980 time period are the key reason for the quality and performance of these aircraft which do generate a better than $14 billion surplus balance of trade—aircraft, aircraft engines, and parts.

A key reason for the quality and performance of these aircraft is the NASA programs and other programs that existed in the pre-1980 time period. Since then, those programs have been reduced by approximately 50 percent.

Now, in short, the current NASA aeronautics programs represent approximately 8.1 percent of the NASA budget; and if you cut out the facilities support personnel costs and so forth, the actual technology programs are about 3.6 percent of the NASA budget.

We believe it is much like a large corporation that is operating in the red that has one of its divisions that is doing very well; it would be ill-advised to withhold support from the bread-and-butter division, and that is what we think aeronautics is in this country, a bread-and-butter division.

In summary, we would like to say that we recognize fully the problems relative to the deficit, but the investments in the aeronautics program and technology programs are true dollar investments. One dollar invested today represents a return of many dollars in the future, as it has in the past; and therefore, we highly recommend full support of the President's budget for NASA aeronautics.

Thank you very much, sir.

Senator DOMENICI. Thank you very much.

[The statement follows:]

STATEMENT OF DR. JOHN CLARK AND DR. NORRIS KRONE, AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

INTRODUCTION

The American Institute of Aeronautics and Astronautics (AIAA) is a non-profit professional society dedicated to advancing the art, science, and technology of aeronautics and astronautics and to promoting the professionalism of those engaged in these pursuits. We have a membership of over 40,000 drawn from all levels of American industry, academia, private research organizations and government, as well as from numerous nations abroad.

The members of AIAA are deeply concerned about this nation's continuing budget and trade deficit. Federal investments in civil aerospace, however, make a vital contribution to future economic competitiveness, international leadership, national security, creation of productive jobs, and a renewal of national pride. As in the past, a vigorous space program will more than pay for itself and assure American leadership in exploring and exploiting the space frontier for the benefit of all.

In this light, the Administration's FY 89 budget proposal for NASA is not a lavish one; indeed, it is barely adequate to maintain current capabilities and to lay the groundwork for essential future developments. Should overall budget pressures force significant reductions in that budget, critical elements of the U. S. civil space program will suffer, perhaps irreparably.

The AIAA strongly suggests that in this Subcommittee's review of the NASA FY 89 budget proposal you keep in mind these overriding concerns:

- NASA urgently needs to improve and enlarge its technology base, which is the foundation of its future capabilities. Support for renewing that base must not be allowed to decay, even though much of its payoff will come in the future.

- Completion of current programs in both science and infrastructure development must take precedence over the introduction of new programs. The costs of program delays and stretch-outs, as measured in capability, motivation, accomplishment, and most particularly dollars, must be avoided.

- The main cost drivers in space activities are technology development and operations. Any reductions in nonrecurring development costs early in a program are to be avoided if they result in substantially higher recurring (operational) costs later. The Shuttle program is a prime example.

In the light of these overriding concerns, we offer our view of the Administration's FY 89 budget proposal for NASA.

SPACE TRANSPORTATION

A sound and cost-effective Space Transportation System (STS) capability continues to be needed for both civil and military programs. We strongly support the guidelines enunciated in the President's 1988 space policy that prescribe a mix of vehicles consisting of the STS, expendable launch vehicles (ELVs), and in-space transportation systems.

As the STS returns to flight status and begins its gradual flight rate increase, funding for extending the Orbiter's time in space, for an additional set of structural spares, and for advanced solid rocket motor development makes good sense. We strongly support the proposed increase in space research and technology for activities aimed at reducing the costs of transporting payloads, both in orbit and from the Earth's surface into space. The Advanced Launch System (ALS) development effort by the DOD and NASA should be effective in avoiding duplication of programs, ensuring the most efficient use of government resources.

Experience with the STS has shown that efficient in-orbit transportation is also essential to low-cost space operations. The AIAA therefore supports the goal of a 1993 first flight of the orbital maneuvering vehicle (OMV). This system will extend the Shuttle's capabilities and play an important role in space station deployment and operations. We also see the need for a new, fully reusable high-energy upper stage for future Earth and planetary exploration.

SPACE STATION

In keeping with our above-stated concerns, we believe current space station funding practices should be changed. Multi-year budgeting would allow the cost savings associated with long-term commitments and planning. The current practice of withholding funding from a program within a budget year is especially devastating to a development program. Rather than cutting funds and slowing down the program, the Congress should direct NASA to get the space station on line at the earliest practical date.

Because the space station will be in operation for decades, the cost of future operations must be determined at an early stage. The NASA Space Station Operations Task Force's recommendations aimed at reducing the costs of operations and encouraging industrial commercialization participation should be implemented expeditiously. Present and planned ELV systems must be incorporated into space station deployment and operations planning, and the current strong emphasis on automation and robotics R&D should continue.

SPACE SCIENCE

The proposed new start for the Advanced X-Ray Astrophysical Facility (AXAF) is a cornerstone of NASA's space science program. AXAF has been the highest priority mission for many years; its adoption will reassert this nation's preeminence in the field it pioneered.

It has been eleven years since the U. S. launched a new major planetary exploration spacecraft. Foremost in this area is the Mars Observer program; its funding should certainly continue. We also fully support Dr. Fisk's strategic planning activities for future solar system exploration beyond the Magellan and Galileo missions.

In keeping with the overriding concerns cited above, AIAA strongly supports the previously funded Hubble Space Telescope, Gamma Ray Observatory, Upper Atmosphere Research Satellite, Ocean Topography Experiment, and Global Geospace Science missions. We commend NASA's funding of instrumentation development for the Earth Observation System, a program that will provide the best and most comprehensive analytical view ever of Earth as a total system.

The Explorer and suborbital programs have been the proving grounds for innovative ideas in physics and technology. They have provided most of our information about the ionosphere and magnetosphere and have served to attract and keep students in space science research. The proposed funding increase for the Explorer program, particularly the Scout-class payloads, has been long-awaited. We recommend that funding for this program be provided for a three-year period to provide stability.

We urge that payload and instrument development funding for the High Resolution Solar Observatory (HRSO) be made a high priority. Breakthroughs in understanding of the magnetohydrodynamic energy release mechanism responsible for solar phenomena can come only from this program.

Expanding human exploration of the solar system will require a more complete understanding of how living systems react to the stresses of space flight. We commend NASA for proposing an excellent life sciences program, one that focuses on the centrifuge and long-duration crew operations. These and other space-station programs, along with elements of the Pathfinder initiative, are essential to the planning of human exploration of the Moon and Mars. We also urge continuation of the joint U.S./Soviet program for analyzing the effect of long duration space flight on living systems.

SPACE TECHNOLOGY

Technology advancement heads our list of overriding concerns. It is therefore gratifying to see it strongly supported by the Presidential policy statement and by substantial funding in the NASA budget. Support for the Civil Space Technology Initiative (CSTI), and especially the new Pathfinder program, promise immense returns in both civil and commercial space sectors.

But the FY 89 NASA budget request is only the beginning of what must become a long-term commitment to space technology development. Too often budgetary pressures have resulted in substantial cuts to the technology base, necessitating catch-up programs later. This is very inefficient, and we urge that you support these critical programs and maintain them in the future.

SPACE COMMUNICATIONS

To regain U. S. leadership, NASA has in recent years focused its space communications R&D effort on the Advanced Communications Technology Satellite (ACTS) program. Although the FY 89 budget request eliminates ACTS funding, it is urgent that the program continue. While many incremental communications capabilities are being developed by the private sector, the critical high-risk technologies represented in ACTS, such as scanning beams and on-orbit switching and digital processing, are not yet suitable for commercial use. It is therefore appropriate for NASA to support this R&D until U. S. industry can bring these technologies into the market-place.

COMMERCIAL PROGRAMS

The AIAA applauds the Administration's strong commitment to fostering the growth of private-sector involvement in space. We endorse NASA's efforts to develop private-sector links via the Centers for Commercial Development of Space and the creation of multi-user hardware. NASA should facilitate this initiative by providing industry with technical guidance and expertise during the planning phase, as well as with space transportation, orbital R&D facilities, and ground test and training facilities. Because the government should not fund commercial activities, a plan is needed for cost sharing and, where appropriate, cost reimbursement to NASA. If NASA takes the lead in developing facilities for industry research leading toward space commercialization, the initial investment should be recoverable by NASA as the facilities are used by industry. It is reasonable to expect industry to fund product R&D and a fair share of facilities' costs, transportation, and other services. The risks, costs, and time required to bring commercially viable returns on space processing investments, however, are all far greater than those of ground-based investment alternatives. It is not reasonable to expect industry to do it alone.

It is also entirely appropriate for the government to undertake the development of space processing facilities whose products may be useful to its programs. NASA's aeronautics, communications and weather satellite programs are earlier examples. However, the lack of economical and dependable access to such facilities is causing scientific researchers and commercial enterprises to turn away from space processing.

To alleviate this critical need at the earliest possible time, the AIAA advocates expanded use of Spacelab and other Shuttle-borne facilities, and we commend NASA's decision to augment the Shuttle's on-orbit duration. We also support the early deployment and use of free-flying commercial space facilities for those experiments until the space station's more comprehensive facilities become available.

AERONAUTICS

It is important to recognize that there is generally a 5- to 10-year lag between the investment and the payoff of NASA Aeronautics Research and Technology (R&T). In constant dollars, the NASA aeronautics programs were reduced by approximately 50 percent between 1980 and 1986, with only slight apparent effects on our current ability to build and market the world's best aircraft. The health we now enjoy is a direct result of the R&T investments made before 1982.

We are pleased to see that the Technology Base programs have been increased by approximately $63 million in FY 89. This is certainly a step in the right direction. However, the $314.2 million budgeted for all NASA Aeronautical R&T is inadequate to cover the many diverse fields contained in this category. These include aerodynamics and thermal physics, materials and structures, control and guidance, human factors of aviation, propulsion and power systems, and computational information sciences research. In terms of absolute dollars (not percentages), both propulsion and materials technology are areas that have been beefed up significantly in 1989. Since the cost of developing one new aircraft (transport or fighter) is measured in billions of dollars, substantially expanding all of these enabling technologies would be a good business decision. We also strongly recommend that a civil service personnel increase of 15 percent for NASA aeronautics accompany the FY 89 budget increases.

We recommend supplemental funding to support a major rehabilitation and upgrade of the NASA wind tunnel facilities. For many years, this important area has been underfunded. Many of these facilities are unique in the world, and they have been vital to maintaining a leadership position in aeronautics. Existing facilities must be refurbished if they are to remain usable and efficient. They also need to be examined for areas in which technology has moved beyond their capabilities. We are pleased that Congress has recognized this problem and appropriated the first increment of funding to refurbish the 12-

foot pressure tunnel at Ames Research Center. We caution, however, that this is only the first step in a costly but necessary process for which NASA has developed a comprehensive five-year plan.

We recognize the difficulties of increasing NASA aeronautics funding under current conditions. However, the situation might be compared to that of a company which, while operating in the red, has one division that is doing very well and shows even greater potential. It would be ill-advised to starve the good division and inhibit its future ability to generate resources. The NASA aeronautics programs are key to the health of our aeronautics industry and, therefore, to the security and economic well-being of the nation. Strong government support for NASA aeronautics programs is an intelligent investment for America.

Thank you for this opportunity to present our views on the FY 89 NASA budget.

STIRLING ENGINE

Senator DOMENICI. Let me ask just a couple of questions. On the Stirling engine, just for my information, I remember when I first came to the Senate probably 3 years into that 15 years, we were discussing alternative engines for automobiles.

Mr. GOLDWATER. That is correct.

Senator DOMENICI. And my recollection is that we had a very big argument with then-President Ford about a major research program to proceed with alternative engines. I think we watered it down and did not proceed with a great deal of effort, but with some. The technology that you work on in space for Stirling, does it convert to the prospect of Stirling engines for ground transportation engine sources of power?

Mr. GOLDWATER. Yes, sir; it very much does do that. The program that we did conduct was a rather extensive activity, to develop an alternative engine at that time for the automotive industry and since then we have been looking for a variety of applications. That technology and that resource and that infrastructure that were developed under that automotive program are being directly used in support of the space power Stirling engine activity.

Senator DOMENICI. What is the lead agency that worked on that at that point?

Mr. GOLDWATER. The Department of Energy.

Senator DOMENICI. And what was the laboratory out in California that did most of the work? Do you remember?

Mr. GOLDWATER. Oh, yes. The study that indicated the Stirling engine was a potential alternative engine was the Jet Propulsion Laboratory. It was a JPL study; I think the name of it was “Which Alternative Engine in the Future?”

Senator DOMENICI. Right.

Mr. GOLDWATER. And it cited both the Stirling and the gas turbine at that time.

Senator DOMENICI. And we proceeded under that and developed some of the basics that you are taking off on with much higher specifications, I assume, for outer space?

Mr. GOLDWATER. That is correct.

SHORTAGE OF YOUNG SCIENTISTS

Senator DOMENICI. Let me ask all of you if you know this or if you have an idea on this. We talk a great deal about having to continue to move in these technological areas and scientific areas, such as the ones you are testifying on; but we hear a corollary to it that we don't have enough young scientists being trained in these areas.

Now, forgetting the fact that many of our doctorates in science and engineering are foreigners, and just generally answer if you would: Do we have enough young people going to graduate school and seeking advanced degrees in the fields you are speaking of? Or is that itself an American shortcoming at this point? We will just start with anybody who has a quick answer.

Mr. GOLDWATER. I believe very strongly that we are facing a shortage of engineering talent in the space sciences. I can speak for myself. I have a couple of young children—three, as a matter of fact—and I don't hear any discussion from their side as to entering into the space sciences field; and that is a little surprising since I continually keep them abreast.

But I think that is representative of the United States, and I don't think the universities, at least until recently, have been promoting technological advancements in that field. So, I do think we have a problem, and I think that the problem starts at the top in terms of promoting a space policy and with substantial goals that would bring us back to a leadership position in that area.

Senator DOMENICI. Anyone else?

Yes, Dr. Krone?

Dr. KRONE. I am the director of the Research Foundation at the University of Maryland; and an example, I think, may serve to benefit here.

There has been more than one case that I know of personally where very bright students—graduate level students—in particularly the aeronautical science area have graduated, worked a couple of years in the science-related areas, and then gone into other industries—for example, real estate—where they could make more money.

So, what it really amounts to is that the financial benefits—rewards, more or less—do not commensurate with the brain power of these people.

Dr. CLARK. I would say that we lack sufficient engineers and scientists to man the positions available, particularly engineers. Too large a percentage of those we do have are foreign born, and the problem starts at elementary school in knocking scientific curiosity out of all too many of our youngsters.

SHORTAGE OF TEACHING PH.D.'S

Senator DOMENICI. How about the shortage of teaching Ph.D.'s in the fields of science? Can you address that as a more narrow issue than a broad one? I am led to believe that is a growing problem, that the Ph.D. and the post-doctoral candidate are not staying around very long to teach for various reasons. Does anybody have anything reliable we might get in the record here? Am I correct in that assessment, that that is getting more difficult for the good universities?

Dr. KRONE. I will make a comment on that one also.

Senator DOMENICI. Please.

Dr. KRONE. At least from my perspective, the way I see it, again it is the foreign Ph.D.'s that are getting the jobs because there just aren't enough American Ph.D.'s that seek the university teaching jobs.

Senator DOMENICI. Anybody else?

Mr. HILDEBRAND. I don't think we have that problem at the University of Chicago.

Senator DOMENICI. I was thinking maybe we ought to do something in that area around here to encourage it. Some of us are thinking of maybe a special engineering, science, and math program where we might wipe out the college loans on an accelerated basis, year for year as they teach, or something like that.

Dr. CLARK. I would view that as an excellent thought, to increase at least the percentage of U.S. citizens in these areas that are so important to our future.

Senator DOMENICI. Incidentally, do you have any information—any of you—as to how many of the foreign-trained Ph.D.'s stay in the United States? Have you anything somewhat authentic on that issue?

It just seems to me that there is not a great loss to the United States if substantial numbers stay, although those who send them here might not be too happy with the "brain drain" notion; but I am of the understanding that substantial numbers stay. My last numbers were more than 45 percent; I don't know what the new immigration bill is going to do, but, hopefully, it won't hurt it.

PRIORITIZATION OF SPACE PROGRAM

Mr. HILDEBRAND. I can't give you any authoritative figures; but certainly, in my own experience, a great many of our foreign students stay in this country and to our great benefit.

Senator DOMENICI. I have one last question, and I don't know if we ought to pursue it now; but if you feel strongly enough about it and think you have something to contribute and are not undisposed to pick on some of your brothers in the space program, if we have to reduce the space program over the President's request in that he has asked for about a 30-percent increase, what would we cut?

Which programs, in your opinions, would have more priority over others? If you want to think about that and give us something rather quickly in writing, we are going to have to do that, anyway. We can't find the 30-percent increase. We might try, but the problem is that the domestic cap that we got from the Economic Summit Conference means that we can't exceed it for all domestic programs.

And the President, to get the 30-percent increase, had to cut a lot of other programs rather dramatically and eliminate some; and Congress is not disposed. So, every time we don't achieve savings or reductions, we have to take it from somewhere. So, we won't reach the 30 percent, but in the Senate, it looks like we are moving a little more toward the President's budget than the House at this point.

If there are some programs that you feel comfortable telling us are less important than others, it might be helpful; I don't know that you want to do that today. None of you appears to be holding your hand up volunteering. [Laughter.]

Mr. HILDEBRAND. I don't want to offer something to be decapitated, but I think an important consideration is continuity. When we do start something, keep it going.

Dr. CLARK. I think the AIAA has already addressed, to the extent we can, priorities. The only additional thing I might add is that, on this issue, I am in agreement with Dr. Fletcher, when he was asked this question, I believe, last week; and he said that the budget had already been scrubbed.

I don't think I can emphasize too strongly that NASA has a particular problem in recovering from all *Challenger* disaster represents, including getting back on a sensible course of a mixed launch fleet.

And if these legitimate needs to get back to where we thought we were 2 years ago are not met by an increased scope and budget, there are going to be essential parts of the basic program that will suffer. And I think that would be a real tragedy.

Senator DOMENICI. Thank you all very much. It is a pleasure having you.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AND NATIONAL SCIENCE FOUNDATION

STATEMENT OF ALVIN V. BLOCK, PRESIDENT, ESA, INC.

Senator DOMENICI. The next witnesses will be Mr. Alvin Block, Mr. Terry Hart, Father Byron Collins, Mr. Samuel Harvey, and Mr. Peter Giacone. Mr. Block is here from the European Space Agency and will speak on the NASA and the National Science Foundation budgets; and we would like you to proceed first, sir.

Mr. BLOCK. A small correction; not the European Space Agency. ESA is a small company in Bedford, Mass.

Senator DOMENICI. Let me correct that. All right?

Mr. BLOCK. That isn't the first time.

Senator DOMENICI. ESA, Inc. Is that right?

Mr. BLOCK. That is it.

Senator DOMENICI. All right.

IMPACT OF SMALL BUSINESS INNOVATION PROGRAM

Mr. BLOCK. Mr. Chairman and members of the committee, I am Alvin Block, president of ESA, a biomedical research and manufacturing company in Bedford, Mass.

Today, I would like to discuss the small business innovation program and its impact on ESA. Over the last 5 years, small businesses created all of the net new jobs in the United States. Over this period, they have had a 14-percent increase in employment, and now account for over 50 percent of all the people employed in the United States.

NEUROCHEMICAL ANALYZER

Small business has been a major contributor to new and creative technology innovation, which, in turn, has helped maintain the technology lead of the United States over foreign competition. ESA has developed a unique instrument, a neurochemical analyzer, which determines hundreds of neurochemicals in a single measurement of a single sample.

These neurochemicals are message carriers between the brain and the rest of the body, reporting to the brain on the state of health of the body and, in return, carrying commands from the brain on how the body should react.

We believe this measurement capability represents a significant advance in the state of the art, both the mechanisms of a number of the genitive and affective disorders and the relationships between the brain and those disorders.

This information may lead to therapeutic intervention in these disorders and may also provide a route to possible prevention. These disorders include Alzheimer's, Huntington's, and Parkinson's diseases, and infection, pain, nausea, schizophrenia, depression, and substance abuse.

ESA has been the recipient of five SBIR grants totaling $700,000. The SBIR funding allowed ESA to accelerate the development of the neurochemical analyzer, its application to medical research, and to further the understanding of a number of brain disorders.

These grants shortened the total time to bring this technology to market. Major institutions working with the analyzer are the Massachusetts General Hospital, the McLean Hospital in Belmont, Mass., the Bedford, Mass., and the San Diego, Calif., VA hospitals, and the Eastern Virginia Medical School in Norfolk, Va.

The major focus of the research being done with these analyzers is the investigation of the following: biological samples from patients and controls to determine the role of neurochemicals in schizophrenia and depression; the effect of antidepressant drugs on schizophrenia; the mechanism of brain degeneration in both Huntington's and Alzheimer's diseases; the mechanisms and treatment of degenerative brain processes caused by Alzheimer's and Parkinson's diseases, epilepsy, and aging; the effect of blood flow blockage as in stroke on the neurochemistry of the brain; the correlation of neurochemical profiles with early pediatric neuroblastoma; the use of patterns of infectious organisms for early typing and the detection of infection; and studies of the neurochemistry of alcoholism.

Although instrument sales began in the end of 1987, ESA has already contributed to improving the U.S. balance of trade deficit in the amount of approximately 30 percent of our total SBIR grant funding.

We are confident that our instrumentation and the technology development under the SBIR program will ultimately improve the quality of health care and, with it, the quality of life while reducing total health care costs.

I hope that this one story about the successful use of the SBIR program will prompt you to more aggressively support this program in the future. Thank you.

Senator Domenici. Thank you very much.

[The statement follows:]

STATEMENT OF ALVIN V. BLOCK, PRESIDENT, ESA, INC.

I am Alvin V. Block, President of ESA, a biomedical research and analytical instrument manufacturing company located in Bedford, MA.

Today, I would like to discuss the Small Business Innovation Research (SBIR) Program generally and its impact on ESA specifically. The SBIR Program has been in existence since 1983. Its stated goals are to:

o stimulate technological innovation;

o use small business to meet federal research and development needs;

o increase private sector commercialization of innovations derived from federal research and development; and

o foster and encourage participation by minority and disadvantaged persons in technological innovation.

We believe that the goals of the SBIR Program have been met to a significant extent in the case of ESA.

Over the last five years, small businesses created all net new jobs in the United States. Over this period, they have had a 14% increase in employment and they now account for over 50% of all the people employed in the United States.

It is important to note that small business has been a major contributor to new and creative technology innovation, which in turn has helped maintain the technology lead of the United States over foreign competition.

I would like to tell you about ESA's success with the Small Business Innovation Program. ESA has developed a unique instrument, a neurochemical analyzer which determines a large number of neurochemicals in one single measurement. These neurochemicals are message carriers between the brain and the rest of the body, reporting to the brain on the state of health of the body and, in return, carrying commands from the brain on how the body should react. We believe this measurement capability represents a significant advance in the start-of-the-art of understanding both the mechanisms of a number of degenerative and affective disorders and the relationships between the brain and these disorders. This information may lead to therapeutic intervention in these disorders and may also provide a route to possible prevention. These disorders include Alzheimer's, Huntington's, and Parkinson's diseases, and infection, pain, nausea, schizophrenia, depression and substance abuse.

From 1984 to January 1988, ESA has been the recipient of five SBIR grants totaling $700,000. The SBIR funding allowed ESA to accelerate the development of the Neurochemical Analyzer instrumentation and its application to medical research and further

ESA is submitting a joint proposal with the Massachusetts General Hospital and the Massachusetts Alzheimer's Center to use the Neurochem Analyzer to create a data base for Alzheimer's and other degenerative disorders. The data base will correlate clinical, epidemiological, and biochemical information to facilitate the early diagnosis of these disorders and develop and evaluate therapeutic intervention.

Initial sales of the instrument began at the end of 1987. ESA has already contributed to improving the balance of the trade deficit in the amount of approximately 30% of our total SBIR grant funding. We have sold two units to Japan which are currently being introduced into the medical research community.

We are confident that our instrumentation and the technology developed under the SBIR Program will ultimately improve the quality of health care and with it the quality of life, and reduce total health care costs which continue to grow at approximately 10% per year.

We would like to thank the Division of Research Resources, NIH, for their continued support of our efforts.

I hope that this one story about the successful use of the Small Business Innovation Research (SBIR) Program will prompt you to more aggressively support this program in the future.

ESA is submitting a joint proposal with the Massachusetts General Hospital and the Massachusetts Alzheimer's Center to use the Neurochem Analyzer to create a data base for Alzheimer's and other degenerative disorders. The data base will correlate clinical, epidemiological, and biochemical information to facilitate the early diagnosis of these disorders and develop and evaluate therapeutic intervention.

Initial sales of the instrument began at the end of 1987. ESA has already contributed to improving the balance of the trade deficit in the amount of approximately 30% of our total SBIR grant funding. We have sold two units to Japan which are currently being introduced into the medical research community.

We are confident that our instrumentation and the technology developed under the SBIR Program will ultimately improve the quality of health care and with it the quality of life, and reduce total health care costs which continue to grow at approximately 10% per year.

I hope that this one story about the successful use of the Small Business Innovation Research (SBIR) Program will prompt you to more aggressively support this program in the future.

STATEMENT OF TERRY HART, CHAIRMAN, INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC., WASHINGTON OFFICE

Senator DOMENICI. We will now hear from Mr. Terry Hart, chairman of the Institute of Electrical and Electronics Engineers, Inc.

Mr. HART. Thank you, Mr. Chairman.

Senator DOMENICI. Thank you.

Mr. HART. IEEE is offering once again strong support for the NASA/NSF budget requests. This support is based upon our belief that the NASA and NSF programs are critical to our nation's long-term prosperity.

We understand the magnitude of the budgetary pressures on the Congress this year, but the budget reductions of previous years have eroded our nation's ability to lead the world in the development of new technology. We must be willing to invest in our technical base if we are to provide this leadership and assure our prosperity.

Our specific views on the various NASA and NSF programs are presented in our written testimony. Rather than repeat that here, I would like in the next few minutes to express some of my personal views, as a former NASA astronaut, on another aspect of the importance of our civilian space program to the nation.

BENEFITS DERIVED FROM SPACE PROGRAM

In the past 10 years, I have had the opportunity to speak about our space program to a wide audience, from elementary school students to industrial executives to senior citizens. In doing so, I have often described the many benefits that we all derive from our space program, both the direct benefits such as new scientific knowledge and technological spinoffs, and the indirect benefits, which have stimulated our economy and fostered a sense of national pride.

I have observed over the years that people appreciate the direct benefits; they are glad that eggs don't stick to their frying pans any more, and they believe that scientific and technical gains are important.

U.S. LEADERSHIP IN JEOPARDY

But it is really the indirect benefits of our exploration of space that excite most of them. Just as they want their home town team to win the Super Bowl, they want their nation to lead the world in the exploration of space. They want to participate vicariously in this great adventure, and it would be unacceptable to them to watch their nation surrender the lead to others who will gladly accept it.

February 4 of last year may become an historic date. It will likely be the last day that we humans all remained on this planet. The Soviets named their Mir space station on that day, and they fully intend to maintain a permanent presence in space.

Most of our nation is unaware of the lead the Soviets are building in space, and it is not just the Soviets. Much of the industrial world is aggressively planning to exploit space for the benefits it will offer. Our space program is at a critical point this year.

A long-overdue national space policy is in place, giving us the highly visible goals that we need to revitalize our efforts in space. If, however, we do not adequately fund the programs needed to implement this policy, it will be clear to the world that we have lost the will to provide leadership in space.

If we are not willing to establish a permanent space station, we will effectively have relinquished any claim to that leadership.

The few tenths of 1 percent of our federal budget that are needed to revitalize our space program is a small investment that will have a significant payoff in the benefits of space technology and in our sense of national pride.

Thank you for this opportunity to express my personal views and those of the U.S. membership of the IEEE.

Senator DOMENICI. Thank you.

[The statement follows:]

STATEMENT OF TERRY HART, CHAIRMAN, INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

It is a pleasure to submit the views of the Institute of Electrical and Electronics Engineers (IEEE) on the proposed budgets for the National Science Foundation (NSF), and the National Aeronautics and Space Adminstration (NASA) for Fiscal Year 1989. The IEEE is the world's largest technical professional society, with some 232,000 members in the United States alone. Our membership consists primarily of engineers and scientists in the electrical, computer and communications disciplines, so we have a very great interest in the programs of both the NSF and NASA.

Today, the United States economy faces the greatest competition from offshore manufacturing than any time since the 1930's. This is largely a result of other nations rebuilding formidable post-war industrial capacities, and often employing technologies that were originally developed in the United States to drive us out of both foreign, as well as our own domestic, marketplaces. To a large extent, the ability of the United States to forestall further erosion of our economic well-being will relate to our ability to prepare the next generation of highly skilled technical manpower, and our ability to set a rapid pace of technological innovation well beyond that of our economic competitors. We believe that the NSF and NASA will play essential roles in this process.

National Aeronautics and Space Administration

Last year we supported the NASA budget request and strongly endorsed the recovery of the Space Shuttle program, the procurement of a fourth orbiter, the full scale development of the Space Station, a resumption of ELV procurements, the strengthening of space science and applications, and a general rebuilding of NASA's technical base. We are encouraged by NASA's progress this past year as it begins to revitalize our civil space program.

This year, for the first time in two decades, the NASA budget request includes a substantial increase which, if approved by the Congress, will ensure the continued revitalization of our civil space program. We applaud the President for recognizing the importance of the Government's civil space program to our nation, but we also appreciate the realities of the budgetary pressures on the Congress this year. We want to encourage the Congress to consider this budget as an investment that has been overdue for many years. During those years, a declining NASA budget has restricted our nation's growth in aerospace technology -- now is the time that we will either reestablish our world leadership in space or permanently relinquish it to others.

We are particularly encouraged by the balance that NASA has struck in this budget request. It is a balance of long-term and short-term goals, a balance of research and applications, a balance of manned and unmanned missions, and a balance of large and small programs. NASA must not support any one program or discipline at the expense of others. The Advanced X-Ray Astronomical Facility, for example, will complement the other "Great Observatories" by providing our scientific community with a new view of our universe, but much will also be gained by the "small science" that is be conducted by NASA in this budget request.

We are also engaged by the President's recently announced National Space Policy and the prospect of it providing a roadmap for NASA to use in reestablishing its preeminence in aerospace technology. As several studies of our objectives in space have concluded, we cannot lead the world in all aspects of aerospace technology; we must choose our objectives and develop our technology in the areas of our strengths, while working with allies as they develop their own space programs. To this end, we support the President's call for the initiation of the Pathfinder technology studies and urge that NASA be asked to establish an optimum timeline for the exploration of space that is consistent with the level of funding in this year's budget request. If we are to get the most from our investment in space, we must avoid large fluctuations in funding and create a stable environment that will permit us to reap the long-term benefits of research and development. We cannot afford to lead in all aspects of aerospace technology, but we certainly can choose goals for ourselves that will establish our preeminence in the exploration of space, and fund those programs at a level that will ensure their success. We also support the President's call for NASA to create new opportunities for U.S. commerce in space. We believe that NASA's resources are best focused on R&D, and that the private sector's role should be encouraged as a means of reducing the cost of space operations. Finally, we agree with the President's emphasis on the importance of the Space Station as an essential element in any of our future activities in space. We believe that the National Space Policy provides the long-term guidance needed for planning the future of our civil space program. If we are to be the world leader in space, we must be bold in our thinking and ambitious in our goals.

On the issue of our Government's cooperation with the Soviet Union in space, we believe that international cooperation should be pursued with all spacefaring nations, but we would caution against proposing joint missions involving complex technology interfaces. Such missions would require an inordinate technical effort to overcome differences in technology and would potentially compromise our proprietary space technology. If we are to pursue joint exploration of the solar system with the Soviets, and we believe that we should, we would recommend that unilateral missions be planned to complement each other and that the scientific results of the missions be shared freely. For manned space exploration, we also believe that mutually supportive missions for the purposes of sharing data and providing emergency backups would be the best approach to cooperation with the Soviets. Where joint missions offer capabilities that could not practically be provided by either nation alone, the technical interfaces should be minimized in number and complexity. We believe this is achieveable in missions as potentially complex as the Mars soil return and support the prospect of such a mission with the Soviets.

With respect to NASA's space applications programs, we wish to provide a strong endorsement for the continuation of the Advanced Communications Technology Satellite. We have supported the reinstatement of ACTS in NASA's budget request in each of the past four years. Satellite communications has been the most successful economic venture of private industry in space.

This industry, however, must have the cooperation of Government in order to compete internationally, where other nations provide significant support for their satellite communications programs. The recent difficulties of the ACTS program must not be permitted to jeopardize our opportunity to regain a position of leadership in this technology; these programmatic problems must be corrected by vigorous measures on the part of the contractors and the Government. We also regret the cancellation of the Air Force's support for the laser communications package on ACTS. The ACTS technology offers us an opportunity to regain international leadership in space communications. We strongly support the reinstatement of funds for ACTS at the level recently set by Congress and recommend that additional funds be provided to restart the development of the laser communications package. We also believe that planning must be done now for the post-ACT's era. Satellite communications will continue to be a dominate commercial space activity for many years to come, and our nation must maintain a strong R&D presence in this technology if our industry is to prosper in the international telecommunications marketplace.

National Science Foundation

Although this is necessarily a time of austere funding for Federal programs, we believe that the NSF's budget represents the "seedcorn" from which the U.S. economy can grow, by advancing our national human technical base in science and technology. Thus we feel that the Administration is fully justified in proposing $2.05 Billion for the NSF, an increase of 19% as part of the overall plan to double the NSF budget in a five-year period. We see these requests as recognition of the key role played by basic research and engineering education in the health of the U.S. economy and our competitive posture internationally.

We fully concur with the proposal to broaden the earlier NSF initiatives on Engineering Research Centers to include Science and Technology Centers, particularly in Computer and Information Sciences and in Material Sciences and Engineering. The proposed new research programs in materials processes and interfaces, cognitive science and architecture, large scale systems engineering, and supercomputer applications are excellent choices as areas that have great potential impact on the future productivity and competitiveness of the nation.

As we have expressed in previous testimony, we recommend an approach which balances support for such centers with support for individual investigators in disciplinary programs, and thus, also balances support for basic and applied research. Thus we also strongly support the proposal to increase the average grant size to individual investigators, largely to correct the decline in real dollars for support of graduate students during the last ten years, and the equally important proposal to increase substantially the funding of Engineering Research Centers, so as to permit these exemplary units to function as originally envisioned. We would like to see further attention paid in future years to basic research in areas, such as telecommunications, which have not received significant increases to date.

With respect to the two general styles for supporting research activities, through centers on the one hand and individual investigators on the other, we recommend that a third approach between these two extremes should also be employed by the NSF. Because of the magnitude of funding necessary for research centers, very few can be funded. On the other hand, there are many engineering schools of small to medium size across the country, which taken together, contribute a large fraction of the total number of engineering graduates in the United States each year. There is an urgent need to harness this important national resource, if we are to maximize U.S. industrial competitiveness. It is not feasible to operate centers at most of these schools, although many of them have first-class faculty investigators. We suggest that the NSF consider the possibility of initiating a program to support research teams which would not necessarily be either large or cross-disciplinary. Although such teams could, in principle, be supported through either the centers program or the disciplinary programs, it is in fact extremely difficult to compare small group efforts with the other categories. The review process for either of the existing categories tends to eliminate efforts involving three to five investigators. They are clearly too small to qualify as centers, and Disciplinary Program Managers tend to break small team proposals into parts for separate review, which eliminates the synergism available through group efforts.

We would also like to point out that shorter-term, goal oriented research would be one particularly fruitful way of applying such smaller group grants, which could maximize their beneficial impact on productivity in U.S. science and technology. A great deal has been said and written recently about the relatively short-term focus of U.S. industry, which contrasts sharply with the long-term focus of academia. we observe that scientists and engineers from these two critical resource groups in our country are frequently most productive when working together, sharing a focus that is long enough for the results to be competitive internationally, but short enough to give a high likelihood of productive results. Government has had the wisdom to sponsor some such efforts. The NSF Centers are an example, on a larger scale; work sponsored by the Defense Advanced Research Projects Agency (DARPA) is another. DARPA sponsors a full range of team sizes, and in many cases insists on cooperative university-industry efforts in order to bring together the best of theory and practice.

We would like to encourage the NSF to provide grants to small teams of academics, including some for the purpose of working cooperatively with industry. We believe that engineering faculty members would particularly benefit from the practical experience gained in such work. At the same time a much-needed influence would be applied to U.S. industries, drawing them toward products and manufacturing methods more advanced than their current short planning horizon allows. This approach is consistent with the forward-looking management of research funding which we associate with the NSF, and hope to see it implemented under an expanding budget for the Foundation.

In summary, we support the NSF budget with the recommendation that the NSF fund small groups of researchers in intermediate sized centers. We also support the NASA budget request with the addition of funds to reinstate the NASA ACTS program. We feel strongly that our nation should maintain a position of world leadership in the development of science and technology. These agencies are keys to achieving this goal. The few tenths of one percent of our federal budget that are needed to achieve that leadership will be recovered many fold in the prosperity that will result from this investment in our future.

Thank you for this opportunity to present our views to you today, and I would be happy to try and answer any additional questions you might have.

STATEMENTS OF:

THE REVEREND T. BYRON COLLINS, S.J., ASSISTANT TO THE PRESIDENT OF GEORGETOWN UNIVERSITY FOR FEDERAL RELATIONS

DR. SAMUEL HARVEY, JR., ASSISTANT TO THE PRESIDENT OF GEORGETOWN UNIVERSITY FOR URBAN AFFAIRS AND FEDERAL RELATIONS

PETER A. GIACONE, RESEARCH ASSISTANT TO THE OFFICE OF FEDERAL REGULATIONS, GEORGETOWN UNIVERSITY, WASHINGTON, DC

Senator DOMENICI. Our next witnesses are Father Collins, Mr. Samuel Harvey, and Mr. Peter Giacone of Georgetown University.

We are delighted to have you. I assume you want to proceed first, Father, is that right?

Reverend COLLINS. No, Senator. Dr. Harvey has a very brief statement concerning the National Science Foundation. Then, I have a very brief one concerning the space station.

Dr. Harvey?

PRESIDENT'S REQUEST FOR NSF FUNDS SUPPORTED

Dr. HARVEY. Very briefly, Mr. Chairman. We would just like to offer our support for the President's requested increase in funds for the National Science Foundation and to specifically request that the new Science and Technology Centers be made a line item in the budget process so as not to cause a lessening of grants to individual investigators.

The second point is that we would like also to state our support for the position of the Association of Jesuit Colleges and Universities in regard to the National Science Foundation making available to undergraduate colleges a fair share of funds for special facilities and instrumentation.

Thank you.

Senator DOMENICI. Thank you.

SPACE STATION AS MULTINATIONAL EFFORT

Reverend COLLINS. Senator, on the space station, over the years I have followed that. Georgetown University is one that is interested in a very particular aspect of the space station. Listening to the experts testify before me, it concerns what we would call the intercultural aspect.

As you know, the space station is a multinational effort; Japan, the United States, the European Community of Nations are all putting funds into the U.S. space station.

One of the aspects of human nature, which was described earlier by the witnesses in front of me, is that if you leave it specifically in the area of science, science does not appeal to most people's imagination. It is the business aspect, it is the human aspect that I believe that some effort in this program of the space station would well be conceived to have an intercultural aspect.

Georgetown is strong in this; we are not alone in this strength. We are a center for about eight national institutions—universities—in this field. The capability of attracting young, bright scientists into the field must have a business aspect, and that is one thing, I think, that we would like to ask some committee support, not for any specific funds, but for that aspect.

I think it would be a great opening of the field to American minds, and the student who did all the work for this is Peter Giacone, who is with me.

Peter?

Senator DOMENICI. Peter.

Mr. GIACONE. Thank you, Senator. I am a junior undergraduate in the School of Business Administration at Georgetown University. I am presently an accounting major, and I am behind some of the research presented today, as Father Collins said.

INTERCULTURAL OBSTACLES

From a business student's point of view, I worked for the past two summers at Ernest Whinney; and they have a very large international division overseas in Europe and in Japan. One of the problems we encountered was the interoffice invoicing. You know, when you have an international division, even within the same company, it is an accounting nightmare, to be quite honest.

And I think there are going to be a lot of problems when you have different companies working together on the same project—different cultures, different languages, different ways of doing business; and I think if you don't take a little time now, spend a little effort to study some of these problems right now before they develop, it is going to be difficult to solve them later on. And I think what would happen is you would have the danger of spending more time later on trying to overcome these old intercultural obstacles than actually working towards the success of the space station; and I don't think that is something we want to see happen.

Thank you very much for the opportunity to testify.

Senator DOMENICI. Thank you.

[The statement follows:]

JOINT STATEMENT OF REV. T. BYRON COLLINS, S.J., ASSISTANT TO THE PRESIDENT OF GEORGETOWN UNIVERSITY FOR FEDERAL RELATIONS; SAMUEL HARVEY, JR., ASSISTANT TO THE PRESIDENT OF GEORGETOWN UNIVERSITY FOR URBAN AFFAIRS AND FEDERAL RELATIONS; AND PETER A. GIACONE, RESEARCH ASSISTANT TO THE OFFICE OF FEDERAL RELATIONS

As currently planned, the United States Space Station will incorporate the efforts of many partners from various nations--Japan, Canada, and Western European nations--with their various cultures. Given the immense strategic and commercial value of the exploitation of space which will come about because of the space station, negotiations and relations among the partner nations will be critical. Intercultural understanding will be essential for this important cooperative effort to be successful.

Since this project is an unprecedented human experiment in long-term intercultural coexistence and cooperation beyond the earth's atmosphere, it is a matter which transcends the scientific and engineering communities. Input from the authorities on the human experience in law, business, international relations, and liberal arts will be as important as the technical aspects for keeping the International Space Program aloft.

We thank the Committee for its past encouragement.

In order to institutionalize its cooperation to the space station project, Georgetown proposes the creation of an Institute for Space Intercultural Studies. The Institute would be the center for the coordination of the efforts carried out by the various schools of the University, and would function with a minimum administrative budget designed to partially support the salary of a Director and an Administrative Assistant.

The Institute will involve programs for a Future Legal Regime for Outer Space, an Intercultural Awareness Conference, Interpretation and Translation, a Global Issues Seminar, and a Symposium on Science, Technology and Diplomacy. The programs will be coordinated by Georgetown's Law Center, School of Languages and Linguistics, and School of Foreign Service. The programs will be synthesized in participation with associated universities.

We support the President's increase for NSF and specifically request that the new science and technology centers be made a line item in the appropriations process so as to prevent the lessening of grants to individual investigators.

Additionally, we would like to state our support for the position of the Association of Jesuit Colleges and Universities in requesting that the National Science Foundation make available to undergraduate schools a "fair share" of funds for special facilities and instrumentation.

PRELIMINARY PROPOSAL FOR THE CREATION OF INSTITUTE FOR SPACE INTERCULTURAL STUDIES AT GEORGETOWN UNIVERSITY

The School of Languages and Linguistics (SLL) and the School of Foreign Service (SFS) at Georgetown University have cooperated over the last six years to establish, maintain, and expand the role of intercultural studies as realized in the form of a National Resource Center (NRC). This program has been made possible through funding granted under Title VI of the Higher Education Act. The NRC has initiated and developed a series of courses designed to intensify the language learning experience and to integrate language and area studies into an intercultural network of substantive exposure to the values, world views and attitudes of the national regions of the world. This has resulted in the offering of innovative courses such as: 1) the Gestalt courses designed to acquaint students with the way members of that culture reason and view themselves within the particular structures of their societies; 2) the Images of America courses designed to reveal the ways in which people of other cultures regard and react to the United States; 3) the Nexus Seminars designed to study crucial issues such as poverty, food, violence and immigration from the points of view of various cultures; and 4) the World View courses which examine a culture's subjective view of itself as well as its perception of other cultures.

In addition to these courses, a fourth hour of instruction has been added to all third year non-intensive language courses, and proficiency-based intensive courses have been added at the third and fourth year levels geared towards training students in interactive, communicative language skills and strategies.

In time new offerings have been introduced in International Business, Regions and Regionalism, and the World Press as well as interdisciplinary colloquia on foreign cultures. Anthropology and Sociology courses have been added to strengthen the infrastructure of the NRC, which, at the present moment, is expanding toward the fields of Science and Technology, Cultural Diplomacy and International Marketing. During the six years of Georgetown's NRC existence, the University, therefore, has considerably strengthened the quality of the Center's instructional program, its personnel and its outreach activities. There is no question of the University's dedication, expertise, and intent to be a leader in the field of intercultural education and it is for this reason that the University wishes to work cooperatively to develop training and educational programs to effect the most diplomatic and fruitful commercial and scientific endeavors among international partners in space.

Georgetown is willing to be a focus and participant in any training and development programs along these lines given the fact that the United States space station will incorporate the efforts of many partners of various nations - Japan, Canada, and Western European nations - with their various cultures. Given the immense strategic and commercial value of the exploitation of space which will come about because of the space station, negotiations and relations among the partner nations will be critical. Intercultural understanding as much as science and engineering will be essential for this important cooperative effort to be successful and it is in this connection that Georgetown's contribution will be essential, given the institution's strong background in international and intercultural affairs.

The Institute for Space Intercultural Studies

In order to institutionalize its cooperation to the space station project, Georgetown proposes the creation of an Institute for Space Intercultural Studies. The Institute would be the center for the coordination of the efforts carried out by the various schools of the University, and would function with a minimum administrative budget designed to partially support the salary of a Director and an Administrative Assistant. The Director would be paid for half of his time, approximately $25,000, and another $20,000 would be required to cover the remuneration of his Assistant. Therefore, the total administrative cost should not exceed $45,000 a year.

Initially the Institute would promote and carry to its conclusion the following studies:

Future Legal Regime for Outer Space (Georgetown's Law Center)

Five conventions now address our use of outer space: The Outer Space Treaty of 1967, the 1968 Agreement on the Return of Astronauts and Return of Objects Launched into Outer Space, the 1972 Convention on International Liability for Damage Caused by Space Objects, the 1975 Convention on Registration of Launched Objects, and the Moon Treaty of 1975. The Outer Space Treaty sets forth basic principles governing the development and use of outer space, and the other four provide specific implementation obligations. For the most part, countries have respected the obligations under these treaties.

There are, however, many activities which are not fully covered by existing treaties. These include manufacturing activities in outer space, both public and private, pollution of outer space, space stations, direct broadcast satellites, human habitats, emergency assistance for disasters in space, and other industrial, energy, and possibly even agricultural activities. Moreover, there are important legal questions under the existing treaties which remain unanswered, such as where outer space begins.

As we look decades ahead, we can foresee a world in which we will have many public and private entities in outer space and will be continuously transporting items, whether people, materials, or waste, to outer space. Multinational corporations are expected to become major actors in outer space, which will raise complex jurisdictional issues. Yet to date there has been no comprehensive and systematic study of what legal issues will be raised by these developments and at the alternative international legal regimes for addressing these issues. Since new agreements as well as changes to existing agreements may take years to negotiate, it is important that such a study be undertaken now.

The Law Center proposes to sponsor a two-year research project on future international legal regimes for outer space. It would identify and analyze the important legal issues and develop and critique alternative legal regimes. Several regime models are possible: a functionalist regime in which there are separate international agreements for specific functions, a nationalist regime in which those countries operating in outer space adopt their own laws to govern new activities in outer space (perhaps in parallel with other countries as the United States has done with seabed mining), a comprehensive regime covering all activities in outer space reminiscent of the comprehensive Law of the Sea, or an ad hoc largely unstructured regime except for existing agreements. Particular attention would be given to legal issues raised by the commercial space activities of private companies, particularly multinational corporations. The anticipated product would be a book-length manuscript for publication.

The research would be undertaken by noted international legal scholars, both here and abroad, who would draft chapters on selected issues, relevant international law doctrines, and alternative legal regimes. The editor(s) would be responsible for setting the general analytical framework for the book, for drafting the overview chapter, for integrating the chapters into a cohesive analysis and for ensuring high quality in the individual chapters.

While a multi-authored book can pose quality and editorial problems, it is nonetheless desirable to pursue this approach in addressing future legal regimes for outer space. The problems are clearly international and the solutions must be acceptable to many countries. If we have scholars form different legal traditions using their analytical powers to address these issues, we should gain important insights which might otherwise be omitted and should be able to evaluate alternative regimes with greater depth and sophistication.

As an initial step, a small one or two day workshop of experts would be held to formulate the issues in detail and outline the chapters of the book. This group should include several experts in space law, one or two scientific experts, and international legal scholars who are not experts in the field but whose analytical and research skills could make significant contributions to the field. Scholars would then be asked to undertake research on these issues and to draft chapters for the intended book. A larger two or three day meeting would then be held to critique these draft chapters, after which the authors would revise their chapters and the editor(s) would prepare the book for publication. One or two Georgetown University law students would be available to assist in the research for the project and in the editing of the book.

While it is premature to identify all participants in the endeavor, there are appropriate scholars from the U.S., Canada (McGill University), Europe, Argentina, Japan and the Soviet Union who should be included. We might also consider developing links to Prof. Cocca's institute in Buenos Aires, which focuses on space law, and to the proposed initiative of the United Nations University to develop a research and training center concerned with outer space activities.

Georgetown University Law Center is particularly strong in international law and in space law. Professors Edith Brown Weiss, Don Wallace, Barry Carter, and Charles Gustafson teach and write in international law, and Adjunct Professor Paul Larson teaches a seminar on space law and has written in the area. In addition, there is an active law student group on space law.

The budget for this research proposal would amount to a total of $158,000.

Legal Regimes for Space Stations (Georgetown's Law Center)
Space stations raise new issues about what laws govern activities in them. These cover a broad range of laws: patent and copyright law, criminal law, tort law, family law, property law, contracts, and perhaps most importantly, conflict of laws. For the United States, they raise in addition important questions about the relationship between federal and state laws and between federal and state courts in space station activities.

Some of these issues are now being addressed in a preliminary way in the ongoing negotiations for the multinational space station involving the United States, Canada, Europe and Japan. But much more needs to be done. A research study should address the legal problems posed by the alternative configurations of multinational space stations, as a collection of independent modules, as a bi- or multi-national integrated unit, or as an international body responsible to an international organization. Detailed attention also needs to be given to the problems in extending existing federal legislation to U.S. space stations and to stations launched by the private sector, and to the federalism problems which will be raised.

We propose a two year research effort to address these issues. The first component would be a seminar for student son space stations, in which they would write original reserch papers on the various legal issues associated with operating space stations. Several students in Prof. Larson's seminar on outer space law elected last year to write papers on topics such as family law and space stations. With adequate editorial assistance, Prof. Larson could consider using these papers as the basis for a seminar monograph suitable for publication, either separately or in a law journal, such as the Space Law Journal.

Secondly, a conference would be held at the Law Center on the legal regime for space stations operated by teh United States, wholly or in part. The conference would cover both public and privately operated space stations. U.S. scholars would present papers, followed by audience discussion, and the proceedings of the conference would be published. Special efforts would be made to bring the conference to the attention of policy-makers.

The budget for this proposed research on space stations would amount to $65,000.

Intercultural Awareness Conference (Georgetown's SLL)
In addition to a new legal regime, it is obvious that the commercial exploitation of the space station will require the interaction of businessmen from different cultures. This is particularly important given the partnership of Japan, Canada and Western European nations which will be involved in the project. Contact between men and women from these various cultures will involve more than mere linguistics programs. As global political and economic interdependency increase in the world, nations are faced with the necessity of managing the frequent and continual interaction with socioculturally divergent groups. In regard to the space station, there will be a new and complicating factor which will considerably increase the difficulty of this type of interaction. A component which guides the process of interactions like these is found in the framework provided by a Contrastive Conversation Management System (CCMS). (Originally proposed b

Maynard, 1987 as Contrastive Conversation Analysis (CCA)). Such a system accounts for the systematic regularities, variabilities and differences which occur between two sociolinguistically different groups. The interaction in the CCMS framework is shaped and constrained by phonological, morphosyntactic, semantic, pragmatic, discoursal, exchange, and ritual processes.

A thorough understanding of a system like the Contrastive Conversation Management System is a prerequisite for managing the kinds of difficulties which may be encountered in a cross-cultural communication event. The literature in cross-cultural communication illustrates how the mere awareness of the similarities and differences of the 'other' group have contributed to a better understanding of the unfamiliar group. In addition to such explanatory faculties, the CCMS framework may provide cross-cultural communication participants with the capacity to monitor for potential miscommunications (Dascal, 1985).

A sociolinguistic perspective which contributes to the enhancement and facilitation of cross-cultural communication is a requisite for organizations comprised of members from different linguistic backgrounds. Even from a strictly economic point of view, lack of linguistic and cultural information has led to serious monetary waste. For instance, Schaaf (1981) has noted that :

> the average cost of sending a corporate representative to a foreign assignment ranges from $75,000 to nearly $150,000 and that at least 30% of those sent have to be recalled early because they are not adequate for the task. Other training groups report that as high as 65% of those sent overseas return before their tour is over. Some problems arise because representatives are not well prepared, others because their spouses and dependents are not able to withstand the 'culture shock.'

The CCMS has yet to be developed to date. In order to take the first step forward in the construction of the CCMS, it is necessary to investigate the sociolinguistic, organizational nature of conversations between men and women of different cultures. Georgetown specifically proposes to study the problem as it would become manifest in the relations between Japanese and Americans, and it would hope to increase the awareness of such problems, of the similarities and differences perceived in each national group in a subsequent conference bringing together Japanese and American businessmen interested in the space station. For this purpose Georgetown is fortunate in counting on the services of Haru Yamada, a graduate student of Sociolinguistics who is working on her dissertation at Georgetown, has command of both English and Japanese, and is familiar both with American and Japanese cultures. Ms. Yamada would need a stipend and clerical help to conduct her research for one semester and, subsequently, she would require funding for organizing the intercultural conference that has been mentioned. It is estimated that she would need $40,000 to cover her stipend and the required clerical help and $60,000 to cover the costs of the conference.

Interpretation & Translation (Georgetown's SLL)

Georgetown also has the only internationally accredited school of Interpretation and Translation in the United States. Since people of different nationalities would be involved in every aspect of the space station, it is obvious that interpretation and translation services would be indispensable in this connection. The SLL's Division of Interpretation and Translation would propose the following programs:

1 Preparatory stage for space station: Organize simultaneous interpretation services for international colloquia on the launching of the program (technical and medical experts for instance).

2. Broadcasts from the space station to national networks. If the Moon landings are any indication, there will be tremendous interest in direct transmissions from the space station in different languages. The technology has been tried by European networks during the moon landings, when the task was interpreting form the astronauts' English into various European languages. With an international group manning the space station, it will also be necessary to have interpretation from foreign languages into English. Division faculty and graduate shave the necessary expertise for the task (dubbing and interpreting foreign broadcasts). A recent example is the simultaneous interpretation Service by two Division graduates and part-time lecturers for Senator Cary's sub-group on terrorism and narcotics meeting in February 1988; the proceedings were aired nationally and worldwide via satellite. Through the Division's links with similar institutions abroad, an international network could be set up for direct broadcasts as well as for dubbed videotapes to be shown later and become part of library collections.

3. In cooperation with other departments of the SLL, the Division would provide preparatory instruction for resource persons aboard the space station. These resource persons would ensure communication among the team on the space station when necessary for day-to-day routine.

4.Multi-language communication among the space station's crew could also serve as starting point for foreign language instruction programs to be beamed to high schools and colleges. SLL faculty involved in training the resource persons aboard the station could also develop simple syllabi for this purpose.

It is estimated that about $100,000 would be necessary to carry out the programs described above.

Global Issues Seminar (Georgetown's SFS)

This type of seminar in key global issues is the centerpiece of the formal study program arranged by Georgetown's Master of Science in Foreign Service Program for its Fellows in Foreign Service Program designed to provide outstanding professionals the opportunity to spend sometime in the analysis of foreign policy matters. It is a program that allows individuals to reflect on issues and ideas that are emerging to shape the future international environment; recharge intellectual batteries by renewing a base of substantive knowledge; establish links with the diversity of individuals and students in the foreign affairs community; make contact with the younger generation, the successor generation; and enjoy the privileges, amenities and intellectual refreshments afforded by a parenthesis of study and contemplation.

The global issues seminars allows Fellows to interact each week with a different distinguished faculty member most of whom are or recently were foreign policy practitioners. Faculty often use the seminars as a research colloquium where they present and discuss their current research in international and foreign policy issues. The organization of the seminar is designed to facilitate creative thinking and the development of personal friendships among students and faculty.

The specific proposal regarding the space station would be to develop an abridged version of the Global Issues Seminar, which would be offered in a shortened period of time to the various types of personnel involved in the work of the space station including those who would man it once it is in outer space. It is estimated that the cost of this Global Issues Seminar, which would be conducted by Georgetown faculty at the site area where these personnel are actually located would amount to $50,000.

The Symposium on Science, Technology and Diplomacy (Georgetown's SFS)

This is a symposium that would be organized by the program in Science, Technology and International Affairs of the SFS in association with its Institute for the Study of Diplomacy as part of the training to the students enrolled in the program but also with the participation of members of the academic, diplomatic, administrative and business community. The basic purpose of the symposium would be to encourage a dialogue with those persons directly involved in the field of science, technology and international affairs on a daily basis.

The symposium would address problems or issues in international relations that involve negotiating in areas where the U.S. science and technology are of vital concern.

The total cost of the symposium is estimated at $25,000.

BUDGET SUMMARY

Institute for Space Intercultural Studies	$45,000.00
Future Legal Regime for Outer Space	158,000.00
Legal Regimes for Space Stations	65,000.00
Intercultural Awareness Conference	100,000.00
Interpretation & Translation	100,000.00
Global Issues Seminar	50,000.00
Symposium	25,000.00
Total	$543,000.00
University Costs	$320,370.00
	$863,370.00

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Federal Funds

General and special funds:

RESEARCH AND DEVELOPMENT

For necessary expenses, not otherwise provided for, including research, development, operations, services, minor construction, maintenance, repair, rehabilitation and modification of real and personal property; purchase, hire, maintenance, and operation of other than administrative aircraft, necessary for the conduct and support of aeronautical and space research and development activities of the National Aeronautics and Space Administration; [$3,374,200,000] *$4,446,700,000*, to remain available until September 30, [1989, of which $100,000,000 shall be derived by transfer from funds appropriated in section 101(g) of Public Law 99-591 for orbiter production: *Provided*, That of the funds made available by this Act, $225,000,000 is for space station only, which amount shall not become available for obligation until June 1, 1988, and pursuant to section 202 of the Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987, this action is a necessary (but secondary) result of a significant policy change] *1990, of which $967,400,000 is for space station only.*

Further, for the space station only, $2,130,200,000 to be available for obligation on October 1, 1989 and to remain available until September 30, 1991; and further, for the space station only, $2,912,500,000 to be available for obligation on October 1, 1990 and to remain available until September 30, 1992. (Department of Housing and Urban Development-Independent Agencies Appropriations Act, 1988; additional authorizing legislation to be proposed.)

Program and Financing (in thousands of dollars)

Identification code 80-0108-0-1-999		1987 actual	1988 est.	1989 est.
	Program by activities:			
	Direct program:			
	Space transportation systems:			
00.01	Capability development	461,787	641,461	624,460
00.02	Space station	309,461	502,020	938,645
	Scientific investigations in space:			
00.10	Physics and astronomy	545,552	678,345	782,265
00.11	Planetary exploration	346,179	350,277	400,260
00.13	Life sciences	71,299	70,742	100,090
	Space and terrestrial applications:			
00.20	Space applications	554,397	730,764	562,250
00.21	Commercial programs	31,887	88,206	58,690
00.30	Space research and technology	168,874	285,773	382,420
00.31	Transatmospheric vehicle research and technology	42,864	52,017	82,805
00.32	Aeronautical research and technology	382,378	358,243	409,860
00.33	Safety, reliability and quality assurance	10,742	17,148	21,985
00.34	Supporting activity: Tracking and data advanced systems	17,905	18,295	18,755
00.91	Subtotal, direct program	2,943,325	3,793,371	4,382,485
01.01	Reimbursable program	806,086	567,700	826,915
10.00	Total obligations	3,749,411	4,361,071	5,209,400
	Financing:			
	Offsetting collections from:			
11.00	Federal funds	−756,230	−561,919	−818,490
14.00	Non-Federal sources	−14,463	−5,781	−8,425
21.40	Unobligated balance available, start of year	−582,182	−753,958	−59,987
22.40	Unobligated balance transferred, net	2,900	100,000	
24.40	Unobligated balance available, end of year	753,958	59,987	124,202
25.00	Unobligated balance lapsing	306		
39.00	Budget authority	3,153,700	3,199,400	4,446,700
	Budget authority:			
40.00	Appropriation	3,115,700	3,274,200	4,446,700
41.00	Transferred to other accounts		−144,800	
42.00	Transferred from other accounts	38,000	70,000	
43.00	Appropriation (adjusted)	3,153,700	3,199,400	4,446,700
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	2,978,718	3,793,371	4,382,485
72.40	Obligated balance, start of year	853,545	1,390,672	2,145,568
74.40	Obligated balance, end of year	−1,390,672	−2,145,568	−2,730,036
77.00	Adjustments in expired accounts	−5,369		
90.00	Outlays	2,436,222	3,038,475	3,798,017

This appropriation provides for research and development activities of the National Aeronautics and Space Administration. The elements of the program and the work to be performed during 1989 are described below:

Space Transportation Systems Capability Development.—The principal activities include efforts related to the Spacelab, the upper stages that will place satellites in high altitude orbits not attainable by the Shuttle, the engineering and technical base support at NASA centers, payload operations and support equipment, development of the joint U.S./Italy Tethered Satellite System, building of the orbital maneuvering vehicle, and advanced programs study and evaluation efforts.

The Spacelab is being prepared to resume flight activity.

For Space Transportation System upper stages, the two stage Inertial Upper Stages will be modified to accommodate planetary spacecraft, and additional upper stages will be procured for Tracking and Data Satellite missions and several NASA scientific missions.

Development of the Tethered Satellite System will continue in 1989, for first flight in 1991. The development of the Orbital Maneuvering Vehicle (OMV) will also continue in 1989, with the first flight planned for early 1993. The OMV will retrieve spacecraft and provide remote satellite servicing and other operations beyond the reach of the Space Shuttle or the Space Station.

Definition and preliminary design activities on the Crew Emergency Return Vehicle for the Space Station will be continued. Technology development and advanced launch system study activities will continue along with the initiation of definition studies on critical propulsion systems. A focused effort on Advanced Operation Effectiveness will also be initiated in 1989, directed toward development and demonstration of new concepts, techniques and procedures to enhance the operational efficiency and safety for future launch systems and the present National Space Transportation System.

Space Station.—The space station will provide permanently manned, "space-based" facilities for the Nation's science and applications programs, and for commercial exploitation of space, while exploring advanced technologies potentially useful to the economy.

In 1989, development efforts will continue. Definition work on the flight telerobotic system and planning for operations, utilization and transition will also continue.

Scientific Investigations in Space.—Space Science and Applications programs perform basic research to expand our knowledge of the Earth and its space environment, to explore the far reaches of the universe, and

General and special funds—Continued

RESEARCH AND DEVELOPMENT—Continued

to conduct research and experiments to encourage the application of space technology to needs on Earth.

Physics and Astronomy.—Research is being conducted to investigate the environment of planets, the interplanetary medium, and distant space. Preparations will continue for launch of the Hubble Space Telescope in fiscal year 1989. Planning activities will continue in 1989 for future Spacelab missions which were rephased due to the Challenger accident. Development of the Gamma Ray Observatory will continue for planned launch in 1990 along with design activities for the Global Geospace Science mission towards a 1992 launch. Development of several ongoing Explorer class satellites will be continued as well as initiation of a series of small, Scout-class free-flyer spacecraft designed to respond rapidly to scientific opportunities. Design and development activities will begin on the Advanced X-Ray Astrophysics Facility (AXAF), which will allow astronomers to view the universe in the x-ray region of the spectrum with an unprecedented degree of sensitivity.

Planetary Exploration.—This program encompasses the scientific exploration of the planets, comets, asteroids, and the interplanetary medium to provide increased knowledge of the origin and evolution of the solar system. Development will continue in 1989 on major flight projects initiated in prior years. The Galileo and Ulysses missions continue to be reconfigured to accommodate a Space Shuttle launch with Inertial Upper Stages. Integration and testing of the Magellan spacecraft will start in preparation for launch in 1989. The design and development of the Mars Observer will continue.

Life Sciences.—This program provides for the research and technology required to meet the goals of ensuring human health, safety, and productivity in space. In 1989, emphasis will be placed on research on the effects of long-term exposure to weightlessness and development of flight experiments for use on the Space Shuttle and ultimately the Space Station.

Space and Terrestrial Applications:

Space Applications.—The major programs in space applications are concerned with observations of the Earth and its environment, materials processing, space communications and information systems. Major activities in 1989 include research to better understand mechanisms that affect Earth processes, continued development of Space Shuttle and Space Station payloads, and ground-based research in areas well suited to take advantage of microgravity conditions.

Development will continue on major flight projects initiated in prior years. The Upper Atmospheric Research Satellite is scheduled for launch in 1991. The Ocean Topography Experiment (TOPEX) is scheduled for a 1991 launch as part of a collaborative mission with France.

Research activities and flight experiment development in materials processing will continue. Work will be initiated in defining and developing the facilities to be used on the Space Station through the evolution of experiment technology using Space Shuttle flight opportunities.

In space communications, research and analysis will continue to support development of advanced component and device technology for communications satellite systems. Development work will be terminated on the Advanced Communications Technology Satellite demonstration flight.

Information systems activities in 1989 will provide analysis and technology to address concerns of the science community for improved access to and manipulation of data from space science and applications missions.

Commercial Programs.—These programs include technology utilization and commercial use of space.

The technology utilization program is designed to transfer aerospace technology from NASA's research and development base to nonaerospace sectors of the U.S. economy. During 1989, NASA will continue its efforts to help foster the dissemination of new technology developed by the Agency's programs.

The commercial use of space is designed to increase private sector awareness of the opportunities in space. Private industry will be encouraged to invest and participate in high technology research and development using the unique characteristics of space.

Space Research and Technology.—In 1989, work directed toward providing the broad base of technology underlying the conduct of future space missions will continue. Project Pathfinder, which will be initiated in 1989, continues the advancement of technological capabilities and extends the foundation established under the Civil Space Technology Initiative (CSTI) started in 1988. Pathfinder is oriented towards technology activities underlying potential future space missions beyond the Earth's orbit and will provide the advanced technologies to continue U.S. leadership in space.

Transatmospheric Research and Technology.—A joint NASA/DOD program will explore new approaches for cost-effective hypersonic flight in the atmosphere with the capability to accelerate to orbit. The program will pursue research and advanced technology development in the area of hypersonic flight, cooperatively with DOD, and is expected to lead to a transatmospheric flight research vehicle in the early 1990's.

Aeronautical Research and Technology.—This program conducts research and develops technology for future U.S. military and civil aircraft.

Major thrusts of 1989 activities include: continuing advancement in both basic aeronautical disciplines and systems research; maintaining and operating specialized facilities essential to aeronautical research; and pursuing technological advances in critical areas of high risk and potentially high payoff to the Nation. These activities will continue to provide a strong research and technology base in the aeronautical disciplines of fluid and thermal physics, applied aerodynamics, materials and structures, controls and guidance, human factors, information sciences, propulsion and power, flight systems, and systems analysis and studies. Some 1989 key activities in the research and technology base will be augmented where the technology is ready for a major step forward, such as advanced propulsion

MECHANISM OF MENTAL DISORDERS

Senator Domenici. Let me ask just a couple of questions of this panel.

Mr. Block, did I understand that your small business is engaged in such activities as trying to figure out why certain drugs in the mental illness field are reacting the way they are?

Mr. Block. That is correct. Also to understand the mechanism of these disorders so that medical researchers can decide on a more effective way of trying to deal with the disorder or disease.

Senator Domenici. As an example, it is my understanding that lithium, a very commonly used drug for depression—perhaps manic depression, but depression for certain—is for some unknown reason having a very ameliatory and beneficial effect on some aspects of schizophrenia; and I assume part of your research is to see why that is. Is that correct? Is that the kind of thing you are doing?

Mr. Block. We don't necessarily do the research, but we provide the instrumentation to medical researchers.

Senator Domenici. Right.

Mr. Block. But I can give you a good example that deals with NASA. A couple of years ago, we got a subcontract out of the Wright State University School of Medicine to look at space motion sickness; and by describing the metabolic pathways of what the neurochemicals were doing, we were able to show Wright State University exactly what was happening.

They looked at the pathways and said: We can intervene in four or five different places. They arbitrarily picked one, called up Bristol Myers, got a drug, fed it to the cats; and it worked 20 out of 20 times.

Senator Domenici. Now, I was kind of at a loss in asking the staff director here why you were testifying at this particular hearing and why you were advocating this small business set-aside. It seems to me you are also talking perhaps about NSF, but you are also talking about the space program as it relates to your business?

Mr. Block. Yes.

Senator Domenici. Would you tell us again what part of the program you are talking about?

BIOLOGICAL EFFECTS OF SPACE ON ASTRONAUTS

Mr. Block. We are interested in the study of the biological effects of space on astronauts. Will possible long-term space flight cause depression or other illnesses? The possible use of this instrumentation which can predict possibly what is going to happen. A lot of the medical people need to get the information early enough to deal with those effects.

Senator Domenici. Do you think the set-aside ought to be increased?

Mr. Block. Definitely.

Senator Domenici. Doubled? What is your recommendation?

Mr. Block. As a businessman, obviously we will take anything we can get, but I feel very strongly that small business is a very heavy contributor to the technology and the jobs in this country and whatever is doable should be done. It certainly should be increased.

Senator DOMENICI. Father, I just want you to take my best wishes to Father Burkhart at Georgetown. Even though he is not a scientist, I hope you appreciate him.

Reverend COLLINS. Yes; we do. He is one of our best intercultural men.

Senator DOMENICI. He writes great books, too.

Reverend COLLINS. Yes; he does.

Senator DOMENICI. Thank you very much for being here.

INTRODUCTION OF PANEL

Our next panel will be Mr. William Jones, Dr. David Johnson, Dr. Arnold Allentuch, Mr. John Crowley, and Mr. Jerold Roschwalb. These gentlemen will present testimony on the NSF budget request.

Mr. Jones is a representative of the National Democratic Policy Committee, and we would like you to go ahead.

Are any of the witnesses who have already testified still here?

[No response.]

Senator DOMENICI. I was wondering if any of the witnesses who had testified heretofore with reference to NSF would feel comfortable privately giving us some evaluation of the peer review system? Does anybody feel comfortable in doing that?

[No response.]

Senator DOMENICI. I don't see any volunteers. [Laughter.]

All right, then. We will do it another way. Let's proceed.

Go ahead, Mr. Jones.

STATEMENT OF WILLIAM JONES, NATIONAL DEMOCRATIC POLICY COMMITTEE

NASA INTERNATIONAL SPACE PROGRAM

Mr. JONES. Thank you, Mr. Chairman, for the opportunity to testify on the NASA international space program. The National Democratic Policy Committee strongly urges that the nation adopt the 40-year project to colonize the Moon and Mars as the next U.S. national mission in space.

The NDPC further urges that the nation commit itself to the establishment of a half-million population colony on Mars, the relative number necessary to function as a science city within roughly 10 years after colonization begins.

The major ostensible reason that such a magnificent project is not fully underway already is that austerity policies dictate that we cannot afford such expenditures. That statement, however, is just plain dead wrong.

During the 1950's, a similar argument was going on over whether we should spend $50 billion to put a man on the Moon when there were so many things that needed doing here on Earth. We know now that for every dollar of federal tax revenue we invested in the pilot program, between $7 and $14 was returned to the Federal Treasury.

So, for that $50 billion investment, we generated a return of $350 to $700 billion to the Federal Treasury, which otherwise would not have been generated. Attached to the NDPC statement is a transcript of a half-hour nationwide broadcast by Mr. Lyndon LaRouche, the only person to my knowledge who has given a major statement on national space policy among the Presidential contenders.

The true test of the success of an economic program is whether it increases the potential relative population density. By scientific revolutions and technological advances population density has increased from perhaps 10 or 11 individuals in the so-called hunting and gathering society to about 5 billion today, with a potential capacity of around 10 to 15 billion people with present available technology.

A major task of a science city on Mars would be to maintain radiotelescopes in Mars orbit, the equivalent of a telescope whose mirror is miles in diameter. We must get dramatically improved pictures of what is going on in the rest of the universe, especially of those anomalies which baffle current science.

And the further we place our equipment from the electrodynamically noisy Sun, the better these pictures would be. But a major R&D program is also an economic necessity in the short term as well. Assuming that we adopt those tax, credit, and other political-economic policies which allowed us to crank up the rate of production of physical wealth, such as the doubling of industrial capacity, which was achieved during the period from 1940 to 1943, we would achieve these goals.

Without a consistent infusion of advanced technology into the economy, rapid rates of real economic growth would be unsustainable.

MOON/MARS COLONIZATION

The beauty of the Moon/Mars colonization program as the preferred science driver project for the coming 40 years is that virtually every other major technology which we could envision developing would be subsumed by this effort.

We estimate that after initial outlay of $100 billion over the first five years of a Moon/Mars colonization effort, doubling NASA's current budget, if the program is run from the correct standpoint of getting the benefits of the new technologies and the spinoffs back into the economy as quickly as possible, the program will pay for itself from that point on.

Current NASA programs are woefully underfunded. The Mars Observer and soil sample return missions must be accelerated. The space station cannot afford another year of being a project in name only and must receive at least in the range of $1 billion in funding.

We must move forward with the aerospace plane project as a promising way to cheapen the cost of lifting men and materials into Earth orbit. A project for development of Earth orbit to Moon orbit transport vehicles must proceed quickly, as well as the advancement of plans for Moon industrialization, which is the cheapest way of building and putting into orbit the vast amount of equipment necessary for the start of Mars colonization.

The text of the program is in the written testimony. I hope you will have a chance to look at it. I would like to thank you again for allowing me to appear here today.

Senator DOMENICI. Thank you. Your testimony will be made a part of the record.

[The statement follows:]

STATEMENT OF WILLIAM JONES, NATIONAL DEMOCRATIC POLICY COMMITTEE

Thank you, Mr. Chairman, for the opportunity to testify on NASA and our national space program.

The National Democratic Policy Committee strongly urges that the nation adopt a 40 year project to colonize the Moon and Mars as the next U.S. national mission in space. The NDPC further urges that the nation commit itself to the establishment of a half million population colony on Mars, the relative minimum necessary to function as a "science city," within roughly 10 years after colonization begins.

The major, ostensible reason that such a magnificent project is not fully underway already, is that austerity policies dictate that we cannot afford such expenditures. This thinking, however, is just plain dead wrong. It cannot generate a revival of physical production and a sustainable economic recovery.

During the 1950s a similar argument was going on over whether we should spend $50 billion to put a man on the moon when there were so many things that needed doing here on earth. Well, we know now, that for every dollar of federal tax revenue we invested in the Apollo program, between $7 and $14 was returned to the federal treasury. New technologies increased productivity, entire new industries were created, and people were employed at generally higher skilled, higher paying jobs than previously. So, for that $50 billion investment, we generated a return of $350 to $700 billion to the federal treasury which otherwise would not have been generated.

The Moon-Mars colonization program however, does not simply pay back a handsome economic return to the economy. It is actually ECONOMIC NECESSITY that we commit to the program.

Included in this NDPC statement is a transcript of a half-hour national televised broadcast by Mr. Lyndon LaRouche, the only, to my knowledge, major statement on national space policy made by any of the presidential contenders. I would like to highlight two aspects of the discussion on the economic necessity of a major Research and Development program contained in that broadcast which the NDPC wholeheartedly endorses.

The only true test of the success of an economic program, is whether it increases the potential relative population density. By scientific revolutions and technological advances, population density has increased from the perhaps 10 million individuals in a "hunting and gathering" society, to 5 billion today, with a potential carrying capacity of roughly 15 billion persons based on today's technologies.

To advance our understanding of the laws of the universe which will be necessary to increase that potential density, will require study of the very small, such as the study of living cells, and the very large, or astrophysical level. A major task of a "science city" colony on Mars, will be to maintain radiotelescopes in Mars orbit the equivalent of a telescope whose mirror is miles in diameter. We must get dramatically improved pictures of what is going on in the rest of the universe, especially of those anomalies which baffles current science, and the further we place our equipment from the electrodynamically noisy sun, the better these pictures will be.

But a major R and D program is also ECONOMIC NECESSITY for the shorter term as well. Assuming that we adopted those tax, credit and other political-economic policies which allowed us to crank up the rate of production of physical wealth, for example, such as the doubling of industrial capacity which was achieved during the period of 1940 to 1943. Without a consistent infusion of advanced technology into the economy, rapid rates of real economic growth would be unsustainable. Within 4 to 6 years the economy would begin to dramatically slow down.

The beauty of the Moon-Mars colonization program as the prefered science driver project for the coming 40 years, is that virtually every major technology which we could envision developing, would be part of four fields of science and technology subsumed by the effort. These include: 1) The mastery of plasmas. This means thermonuclear fusion as the energy source of the immediate future with its virtually unlimited fuel source, but a significant increase in the temperature or energy density cross sections of our technologies. The hotter our technologies are, the greater the capabilities and efficiencies of production, and the greater the power of man over nature generally. 2) The use of pulsed electromagnetic, or directed energy systems which will revolutionize manufacturing, among other things. 3) The development of the field of optical biophysics which is crucial to the conquering of AIDS and other viral problems. 4) And the development of computers capable of a giga-flop range of information handling, and the development of analog-digital hybrids able to perform non-linear calculations.

We estimate that after an initial outlay of $100 billion over the first five years of a Moon-Mars colonization effort, doubling NASA's current budget, if the program is run from the correct standpoint of getting the benefits of the new technology and the spinoffs back into the economy as quickly as possible, the progam will pay for itself from that point on. In other words, the increase in tax revenues resulting from the benefits of the program to our civilian economy will more than sustain the project after the first five years.

Current NASA programs which would be the front end of this colonization project are woefully underfunded. The Mars Observer and soil sample return missions must be accelerated. The Space Station cannot afford another year of being a project in name only and must receive at least in the range of $1 billion in funding. We must move forward with the aerospace plane project as a promising way to dramatically cheapen the cost of lifting men and materials into earth orbit. A project for development of earth orbit to moon orbit transport vechicles must proceed quickly, as well as the advancement of plans for Moon industrialization, which is by far the cheapest way of building and putting into orbit the vast amount of equipment necessary for the start of Mars colonization.

Another crucial project which we must make a national commitment to is the development of fusion energy as the rocket propulsion source for the Mars trip. The specific impulse for a fusion rocket is estimated to give a two order of magnitude increase in burn time. This means that we can burn our rockets continually, staying in a constant state of acceleration or deceleration. At one gravity acceleration or deceleration, we can cut the travel time to Mars down to 2 days. This is crucial to eliminate the dangers of prolonged stays in weightlessness, drastically cut down on the radiation dangers, and increase the safety of the trip.

The text of Mr. LaRouche's broadcast follow. I believe the economics and science contained in the broadcast are sound. Judging from the responses to the show, the importance of a project such as Moon-Mars colonization is critical to revive a sense of optimism.

THE WOMAN ON MARS

Stellar background. Zoom and montage, to zoom upon image of Mars. A flashing light from the surface of Mars, becoming a steady beacon. Title flashes immediately above the

center-level of the screen: "The Woman On Mars."
MUSIC: largo or slow adagio cantabile of solo violin.
VIDEO: SEQUENCE WITH MOZART DISSONANCE QUARTET OVER

Cut title shot. Montage to establish Earth, then airfield, beginning passage from Mozart Dissonance Quartet. Continue montage, to establish scramjet with piggybacked rocket-plane as in Capuani model, using trick video to establish as life-sized against background.

Continue montage as specified from this point onward.

Shot simulating low-orbit arrival of shuttle rocket-plane. Shot of space tug approaching geostationary orbitting space terminal. Zoom-effect of departure for Mars. Then, add to departure for Mars from geostationary Earth-orbit, a resumption of the opening montage, continuing the Mozart, with the following single change in the original sequence repeated; continuing music, instead of the title "Woman On Mars," briefly dwell the title: "2027 A.D."

AUDIO: MUSIC OUT
Announcer #1: " Are you there, Dr. Gomez?"
WOMAN'S VOICE:

"Yes, John. I have the announcement for which you have been waiting. As of five minutes ago, our environmental systems were fully stabilized. Man's first permanent colony on Mars is now completely operational."

MUSIC: In, up, fade, and out.
ANN #2: If Lyndon LaRouche becomes President next January, that message from Mars will actually occur thirty-nine years from now. The woman who will speak from Mars was born somewhere in the United States within the past year or two.

LAR: Many of you are shocked. Some of you are saying, "Why is this old geezer talking about a permanent colony on Mars, thirty-nine years from now, with the major budget problems in Washington today?"

In a nationwide TV broadcast a few weeks ago, I told you that on my first day as President I shall declare a national economic emergency, and launch the largest economic recovery program in our history. During each of the first two years of my administration, about $2 trillions in low-cost Federal loans will be invested in building up our nation's presently rotting industrial infrastructure plus building up of about five millions new industrial jobs during the first three or four years of my administration.

Looking back to the experience of the 1940-1943 period under President Franklin Roosevelt, we know that the recovery will creak at the beginning, but will build up speed over the first two years, so that by about the third year the United States will have the highest per-capita income in our history.

There are no mysterious tricks involved; it is all basic economics modelled upon our successful economic recoveries under Franklin Roosevelt and John F. Kennedy.

However, to keep that recovery going, beyond the first three to four years, and to make our economy once again the most competitive on Earth, we must invest in creating new technologies. To do that, we must pick up where we left off with the old Apollo program, back during the 1960s. The old aerospace program of the 1960s paid us back more than ten cents for every penny we invested in it. This Mars program will pay us back much much more --not forty years from now, but each year over the fifty years or more to come. This project's spin-offs in the form of new products and new technologies into our civilian economy means, that, by the year 2027 A.D., the average person in the United States will have a real income at least ten times that of today.

As some of you know, my specialty is a branch of science founded by Leibniz, called physical economy. Over the years, my associates and I have had the privilege of working with some of the world's leading scientists in plasma physics, optical biophysics, and space technology. What I have done, is to put this scientific knowledge together with my own expertise in physical economy, just as I did back in 1982 when I proposed what became known as the SDI. I have also consulted with some leading organizations in Europe which are already prepared to go to work on some aspects of a Mars colonization program.

At an international conference held in Virginia during the Summer of 1985, I submitted a paper outlining a forty-year project for establishing a permanent colony on Mars. About a year later, the President's Space Commission proposed a similar Mars project.

This is no Jules Verne dream. It is hard science. Every step is based on technologies we shall have ready at the times this Mars project requires them.

Tonight, I shall report to you some highlights of that Mars program. I shall explain how this project will cause rapid growth in our economy even during the next few years just ahead.

TRANSITION: SHOT OF SHUTTLE TAKING OFF.

LAR: The first problem in getting toward Mars colonization, is to build a replacement for our present NASA Shuttle system. We should use the existing shuttle system until we develop its replacement; but we need a system which can put a ton of payload into geostationary orbit about ten times cheaper than we can do that today. We also need a system that is safer, easier to launch and maintain than our present system.

CLARIFICATION: Spread the visuals of MBB and its Saenger design throughout, between and following the two paragraphs referencing this.

LAR: We need something which could be made operational in a few years. So, I travelled to West Germany, to the leading aerospace firm MBB, with which my friends and I had had contact in connection with proposing the develop- ment of a western european version of the SDI. MBB is prepared to proceed with a design which was already proposed as the alternative to our shuttle system back at the beginning of the 1970s. It is called the Saenger project, named after the leading space-scientist who developed it. I propose that our aerospace firms cooperate with the Europeans and Japan in accomplishing this.

The Saenger system has two elements. One of the elements is what is called a scramjet. The other is a rocket-plane, a replacement for the shuttle-craft, which is piggybacked on the scramjet. The scramjet takes off with the shuttle attached, reaching about eight times the speed of sound at an altitude of about 150,000 feet. At the top of its flight, the scramjet releases the shuttle which flies on its own power into low Earth orbit. This scramjet has obvious civilian as well as potential military uses. Potentially, it cuts the cost of getting a ton of payload into space by as much as ninety percent. [VISUALS HERE]

LAR: My friends in Italy's aerospace industry came up with an improved design for such a scramjet configuration. This is the proposed design, which has many aeronautical advantages, including the ability to take off from ordinary airfields. One of the reasons for the curious shape, is that our italian friends have used what its called the "Busemann biplane principle," to lessen the drag. [VISUALS HERE]

VISUAL: [TRANSITIONAL USE OF CLOSING VISUAL OF BI-PLANE]

LAR The development of this new shuttle system means the early development of several new industries, and important improvements in the construction of ordinary automobiles as spin-offs.

ANN 2: [VOICE OVER SCROLL OF LISTING ON SCREEN]:

Improved power-plant designs for aircraft and automobiles, with fuel economies and reduced pollution from combustion. ... New kinds of materials, more heat-resistant and stronger, meaning, in addition to other benefits, stronger and safer automobiles. ... Advanced new basic industries to produce the new kinds of materials for general use. ... Civilian and military aircraft capable of reaching almost any of the most distant points in the world from the United States within not more than about three and a a half hours.

LAR: What propulsion system shall be use? For various reasons which I need not discuss here, I requested a propulsion system which could carry a manned space-craft at a constant acceleration of one gravity.

I presented my proposals and specifications to a group of scientists in West Germany. They worked through the calculations I proposed, and reported back to me a design for a manned space-craft with an on-board fusion propulsion system operating with one terawatt of power.

The United States has been working on designs for fusion powered propulsion systems for about twenty years. One system was outlined by NASA representative John J. Rienemann at an Air Force conference back in 1971.

VISUAL: Colored version of Figure 2 from page 29 of 21st Century.

ANN: [VOICE OVER] "This early design for a fusion-propelled rocket uses what is known as the magnetic mirror configuration. The fusion reaction takes place in the central, cylindrical reaction chamber. The exhaust propelling the spacecraft comes out at the right of this diagram."

LAR: Another of the standard designs is one worked out by Lawrence Livermore Laboratory.

VISUAL: FIGURE 3 FROM PAGE 20 OF 21ST CENTURY, ALSO COLORED FOR CLEARER REPRESENTATION ON VIDEO

ANN: [VOICE OVER] In this design, the payload is at the front of the spacecraft, connected to the propulsion system by a twenty-on truss. A small, megawatt power-source is built into the propulsion system. An automated factory inside the unit makes the fusion pellets, and feeds them into the engine. Two hundred kryptom flouride lasers are aimed at the pellets to produce the fusion propulsion.

LAR: Twenty-five years from now, we shall have more advanced designs. We shall have plants producing a terawatt of output, and using helium-3 mined from the Moon's surface as the basic fuel for travel between Mars and Earth. We know already the lines of research and development we must follow. The schedule I have chosen for completing this work is well within safe limits of estimate. The two designs identified give you a general idea of the system.

With this system, a manned craft leading an orbitting space-station above Earth could reach the orbit around Mars IN AN AVERAGE OF LESS THAN FORTY-EIGHT HOURS. For the giant unmanned freighters, we would use the same propulsion system to make the journey more slowly in a period of weeks.

VIDEO: Simulated animation of an Earth-Mars flight trajectory, marking off the hours by seconds.

[In the animated visual, show Mars in two locations: where is is at the time of departure from Earth orbit, and where it is at the time of arrival. Show the space-crafts' (five of them) trajectory as a logarithmic spiral form of departure from Earth-orbit, and spiralling in similarly into the Mars-orbit desination. Move Mars slightly to reflect its orbital progress during the less than forty-eight hours of lapsed time of manned flight.

AUDIO: INTERPOLATION: WITH ANIMATION, RESUME MOZART BRIEFLY

ANN: LaRouche applied his professional skills as a physical economist to work out preliminary designs for the new cities to be built on Mars.

VISUAL: Christopher Sloan drawing for Fusion. VOICE OVER

ANN: This is an artist's drawing of LaRouche's design. When the construction is completed on Mars, the lower half of the geodesic domes you see drawn here would be under the surface of Mars. The central dome is the living-space for members of the colony, with a large educational park at the center. The outer domes are areas for production and growing of food-supplies.

VISUAL: VISUAL OF VERTICAL CROSS-SECTION

ANN: What you see on the screen, is a cross-section of the center geodesic dome, from top to bottom. The inhabitants of the city live in the upper half of the dome. Transportation, storage, and utilities are underneath.

VISUAL: HORIZONTAL CROSS-SECTION OF IMMEDIATE SUB-SURFACE LEVEL

ANN: The inner dome has twelve transportation pathways leading from the central park to the outer rim, and to the production-areas beyond. What is not shown in the diagram on your screen is circular transportation tracks, each spaced at distances consistent with Kepler's Third Law. Shown on your screen is a spiral pathway, cutting across the other lines of movement within the city.

LAR: There are some very important laws of physics involved in selecting this design. In the past, many of the best designed cities on Earth were designed according to similar principles. I think that I can predict safely that all human colonies in space will be built according to the same basic principles I have used in this design. Now, it seems that we shall go back to such sound principles of city-building design on Mars and perhaps in the Sahara desert, before we begin to rebuild our older cities on Earth in ways better suited to the physical and psychological needs of human beings.

TRANSITIONAL VISUAL:
LAR: In order to colonize Mars, we must create mining and fabricating industries on the Moon. These would be largely automated industries based on the new energy-systems and laser-related tools we are now in the process of developing. To give you a rough idea of what the scientists have presented to me, this means power-plants with about a thousand times more output than a power plant on Earth today, with an effective operating temperature at least ten times that of any power plant on Earth now.
TRANSITION: MOZART, OVER MOON VISUALS.
ANN: How will this Mars project affect the economy of the United States. LaRouche answers:

LAR: With this kind of power, we can be assured of increasing the average output of wealth per person about ten times today's level, within a period of between one and two generations. As a result of this and other features of the project, we may expect to increase the average income of the United States by up to ten percent per year average by some point during the coming years, with about five percent average growth in real income during the coming ten years.

Put it the other way around. Without a science-driver project, such as this Mars project, the United States economy will not become competitive again, and there would be very slow improvement in incomes beyond the levels we should reach by about 1994-1995.

ANN: Why must it be the Mars colonization project. Why not a different choice of science-driver program? LaRouche answers:
LAR: There are two reasons we must choose a Mars project as the way to achieve the rates of economic growth needed.

First, there are powerful reasons we must have a colony on Mars. To achieve certain very specific kinds of scientific breakthroughs we shall need on Earth, we must do the kind of astrophysical research we can not do without a Mars project. The practical purpose is to build up a system of giant radio-telescopes as far away from the Sun as possible. To sustain the scientists and engineers working on these space laboratories, we need a nearby logistical base. To support those scientists and engineers requires a population about the size of a medium-sized city on Earth. Since Mars is the nearest location which meets the requirements, we must colonize Mars.

The second reason is that the Mars project uses every frontier technology we might expect to develop during the coming fifty years of scientific research. That means, that the space program would be supplying our civilian industries with the most advanced technologies possible at the most rapid rate, putting the United States permanently in first place in technology.

These technologies include plasma processes, which are not only the energy-sources for all mankind during the coming fifty years and more, but also the new basic industrial technologies. Once we can bring sufficient cheap energy to bear, not only to boil tungsten but to heat it into a plasma state, all limits to natural resources, as we now define such limits, cease to exist.

A second, related technology is that represented in a primitive way by today's laser machine-tools. This means controlling the entire electromagnetic spectrum as the basic tool of production for uncounted centuries still to come.

A third technology is modern optical biophysics, perhaps the only technology which will enable us to provide cures for such diseases as cancer and AIDS. Apart from human health needs, this is the great revolution in biology for the remainder of this century and the next.

Every other breakthrough in technology we can forsee, until the time we master what we call the matter-antimatter reaction as an energy-source, will fall among these three categories of scientific rsearch and development. By putting all of these technologies into a single mission-oriented research and development project, we are able to ensure that the United States will be first in technology for fifty years to come.

With this Mars program, we can assure every one of you that your children and grandchildren has the opportunity for a bright future. That, in my opinion, is the true mission of government.

TRANSITION:

ANN: LaRouche sums up his report, by describing the way in which the Mars-mission project will spill new technologies, and entire new industries into an expanding job market:

LAR: As President, I shall call together the representatives of industries including the automotive and aerospace sector. I shall say to them, 'Ladies and gentlemen, I need your cooperation to give the United States the world's most advanced tool industry. I shall wrestle with the Congress to provide such legislation as we need for you to do your part in the job properly. We are going to get the last disgusting vestige of decay, pollution, and poverty out of this nation's life, and you are going to play a key part in bringing this about.' It will work like this.

First, as I told you in my broadcast several weeks ago, we are going to pour about $2 trillions a year of low-cost credit into infrastructure and industrial expansion.

Second, we are going to have an emergency tax-reform which stimulates investment with investment tax-credit incentives.

Third, the research and development of the project will be tightly interfaced with the growth of our modernized tool sector.

That means that the tool sector will have the new technologies available as rapidly as they are developed. It means that industry can obtain uses of these technologies as rapidly as they are developed. With ample low-cost credit for investments in new technologies, plus investment tax-credit incentives, our national economy will achieve the highest rate of technological growth in history.

This will require sweeping improvements in public school education. It requires more classics and science in the schools. It will require National Science Foundation scholarships and merit-pay increases for teachers, and will require National Science Foundation assistance to local schools in providing the exhibits and other teaching materials needed to introduce students to the new space-age technologies.
This requires a shift away from present trends in business education, to produce more managers qualified in production technologies.

It means a much better way to live, than the drab misery, illiteracy, and decay, into which our nation has been drifting the past twenty years.

Then, thirty-nine years from now, we shall hear the broadcast from Mars, announcing that the first permanent colony there is operational. Among those colonists will be some of the children and grandchildren of you watching this broadcast tonight. Many of you will be watching that first television broadcast from the new colony. Already, the woman who will speak to you from Mars, has just recently been born somewhere in the United States.

We shall give our nation once again that great future which our children and grandchildren deserve.

VIDEO: REPEAT THE SEQUENCE BEGINNING WITH THE SCRAMJET TAKE-OFF, WITH MOZART RESUMED, TO CLOSE. CLOSING CREDITS OVER.

NATIONAL SCIENCE FOUNDATION

STATEMENT OF DAVID H. JOHNSON, PH.D., EXECUTIVE DIRECTOR, FEDERATION OF BEHAVIORAL, PSYCHOLOGICAL AND COGNITIVE SCIENCES

Senator DOMENICI. Our next witness is Dr. David Johnson with the Federation of Behavioral, Psychological and Cognitive Sciences.

Would you please proceed, Doctor?

Dr. JOHNSON. I thank the subcommittee for this opportunity to discuss the fiscal year 1989 National Science Foundation budget. For the past 4 years, the research budget of the National Science Foundation has not grown in real terms. The fiscal year 1989 request is an attempt to regain momentum lost over these years.

Our organization strongly supports the level of funding for NSF proposed in the fiscal year 1989 request. Science serves many national interests. This is a compelling reason for the national government to support science, but there is another reason for granting the requested level of funding. That reason is not so much related to the national interest as it is related to the development of the scientific enterprise itself.

COLLABORATIVE EFFORT KEY

Science is changing. The new reality is one in which collaborative rather than solitary effort holds the key to new discoveries.

Scientists are beginning to interact across disciplines; they are doing so because they must. They have reached a point in their own science where progress demands that they borrow equipment from other sciences, learn techniques not previously used in their own field, and that they reconcile the key concepts of their own disciplines with those related disciplines.

In the behavioral sciences, for example, new understanding of how the mind, the body, and the surrounding environment influence each other is being achieved because neuroscientists, psychologists, and biologists are all focusing on a common problem area and are using the techniques and equipment of the other sciences in new ways.

Psychologists have long known that a reward that follows an action can increase the frequency of that action. Neuroscientists, on the other hand, had developed brain-mapping techniques but had always assumed that the brain is first stimulated and then it responds.

It took psychologists using the brain mapping techniques of neuroscientists to discover brain mechanisms that first respond and then are stimulated. These are the reward mechanisms of the brain.

Biochemists acting on this information have identified an array of chemical transmitters that activate the reward mechanisms. You can see in this example how the interaction of sciences is achieving important scientific breakthroughs and how any one of these sciences in isolation would not have yielded the same rewards.

Presently, the foundation is structured along disciplinary lines. The discussions one hears when attending meetings of the advisory committees within the various directorates are instructive. There is debate over how to review increasing numbers of proposals that seek use of an unfamiliar piece of equipment or employ a technique not previously used within the discipline.

One hears discussions of how students are going to need a new kind of training if they are going to become productive in this new atmosphere of science. One even hears seasoned scientists trying to figure out how they can retrain themselves efficiently.

IMPROVED SCIENCE EDUCATION SOUGHT

The new money for NSF would improve science education, an effort that is especially important in view of the rapidly evolving nature of the scientific enterprise itself. It would fund science and engineering research centers, which are meant to be devices that facilitate the collaborative interactions I have been describing; fund group projects, allowing scientists working on a common set of questions to share their expertise systematically.

And finally, it would fund several research undertakings whose focus would be a research problem area, rather than support of research within discreet scientific disciplines.

Science will continue to move toward integration of disciplines. The National Science Foundation can facilitate the process or it can hinder it. Through its 1989 budget request, it seeks to be a facilitator.

We urge your full support to the Foundation's effort to adapt to the new requirements of science. Thank you.

Senator DOMENICI. Thank you very much.

[The statement follows:]

STATEMENT OF DAVID H. JOHNSON, PH.D., EXECUTIVE DIRECTOR, FEDERATION OF BEHAVIORAL, PSYCHOLOGICAL AND COGNITIVE SCIENCES

Mr. Chairman, members of the Subcommittee, my name is David Johnson. I am Executive Director of the Federation of Behavioral, Psychological and Cognitive Sciences. The Federation is an organization of thirteen scientific societies and more than 84 university departments and centers. Our combined membership exceeds 90,000 individuals whose research interests include all aspects of behavioral science and its application to education, health and human development. We thank the Subcommittee for affording us the opportunity to comment on the fiscal year 1989 appropriation for the National Science Foundation.

The 1987 budget summit agreement between the Congress and the White House has placed a strict constraint on the appropriations process for fiscal year 1989. Because the bottom line was set by the agreement, the Congress is faced with setting spending priorities within a fixed framework and among programs that have very different purposes. Last year, in the first round of this priority setting, the National Science Foundation as a whole was held to an essentially steady-state funding level. Within that overall figure, education fared well; individual research lost ground in real terms; and the Centers Initiative was postponed. Fiscal 1988 marks the fourth year of essentially steady-state funding for the Foundation as a whole. This funding pattern has forced the Foundation to do little more than maintain its ongoing programs. There has been little room to adapt to changing needs in science.

Over those four years of steady-state funding, some important changes have been happening in science. Last month the National Research Council released its long-awaited landmark study of the behavioral and social sciences. A statement in the preface to that volume aptly describes the current state not just of behavioral science but of science in general. It says simply this: "...many of the opportunities currently visible in the behavioral and social sciences spring from and support the development of methods, tools, and concepts across disciplines."

For all its simplicity, this statement has profound implications for science policy. Many sciences have developed to a point where future breakthroughs will require collaboration among researchers from disciplines that previously did not interact. Future breakthroughs within many disciplines will happen in part because scientists within those disciplines borrowed techniques and equipment from other disciplines. This coalescing of sciences is a momentous evolutionary change for the enterprise. If the National Science Foundation can adapt to this change, it will help to propel science toward discoveries that are beyond the grasp of research confined to discrete disciplines. If, on the other hand, fiscal constraints continue to prevent the making of needed adjustments at the Foundation, then the Foundation can become an impediment rather than an impetus to further progress.

It is the case presently that while science is moving toward collaborative efforts, the National Science Foundation is structured along essentially disciplinary lines. The directorates have this structure as do the peer review panels within directorates. If one attends the public sessions of review panels, it quickly becomes clear that the panels are wrestling with ways to fairly evaluate interdisciplinary proposals and proposals employing unfamiliar methods and equipment. There is discussion of scheduling joint review panels or of bringing in special reviewers, for example. There is also discussion of new kinds of training grants that would train not students but seasoned researchers who realize they need new expertise to make further progress in their science. Officers for the Foundation are listening to these voices from the field and are looking for ways to adapt or create structures at the Foundation to meet the new needs.

This year, as last year, the President has asked for substantial real growth in the NSF appropriation. The request is not solely for more money. It must be viewed as a request to permit the Foundation to adapt to the new scientific environment. The largest portion of the requested increase would go toward launching the Science and Technology Centers Initiative. This Initiative is a centerpiece of the effort to adapt. The key concept of the Centers Initiative is that centers will become organizational devices to facilitate collaboration and the exchange of techniques, tools and concepts among disciplines.

We would note that while the Centers Initiative appears to be the largest new proposed expenditure in the NSF budget, the actual outlay in fiscal 1989 would be only one-fifth of the requested amount. Sufficient funds are requested up front to fund each center for five years. This is a sensible decision on the part of NSF officials because it would give the Initiative sufficient stability to attract the strongest proposals. It is also significant that it would give the centers finally funded the best opportunity to reach full productivity. More than 300 groups of scientists have already submitted proposals for the centers competition. No proposal was accepted that did not have a strong collaborative component. And this collaboration is by no means limited to researchers. Ideally, each proposal would also describe how the center would incorporate graduate and undergraduate students and entities outside the center including private industry.

Another of the Center Initiative's unique features is its advisory panel which includes scientists from each of the sciences that receives NSF funding. Organizationally, the Centers Initiative is separate from the disciplinary directorates. At the same time, the program draws on the expertise contained in each of the directorates. So, even within the Foundation's own structure, the centers program is a device that fosters collaboration.

As I mentioned, this new cross-fertilization going on in the sciences is creating several pressing needs. Training and, indeed, retraining of scientists in a collaborative atmosphere is different from training that equips a scientist for work in a single subdiscipline. The research techniques of other disciplines must be learned; the proper use of new kinds of equipment must also be learned; and key concepts of other disciplines must be incorporated with the concepts of one's own discipline. There are few efficient ways to meet these new needs right now.

NSF proposes to address these needs in at least three different ways in addition to funding the centers. First, the NSF request includes funding for groups. These work units are not as elaborate as centers. Yet, they provide a number of researchers with an opportunity to work together and, through this interaction, to gain familiarity with the techniques, tools and concepts of other disciplines.

Secondly, within the disciplinary research programs, a portion of the request for increased funding would go toward support of work on problems requiring interdisciplinary investigation. This organizational technique of funding research on a problem rather than research within a discipline will bring scientists from many disciplines together to solve problems that could not be adequately addressed within a single discipline.

Several of these research problems are of particular interest to scientists represented by the Federation. For example, there will be a special focus on what is being called biological communication. The research is aimed at understanding how signals are received and processed within and between organisms. The knowledge gained from this research will have application in areas ranging from agriculture to health. The research will require the work of biologists, psychologists, ethologists, linguists and a host of other disciplines.

The same is true of a second research problem slated to receive special attention within the Biological, Behavioral, and Social Science Directorate. That effort will be aimed at understanding how learning occurs. This research will require the concentration of such disciplines as neuroscience, psychobiology and ethology. Working together on the same problem biological, behavioral and social scientists will achieve a far more complete understanding of the interaction of biology, behavior and environment than had ever been possible when these sciences worked in isolation from each other.

Another collaborative effort within the BBS Directorate is likely to be almost immediately applicable in the workplace. That thrust will combine the work of scientists whose interests lie in the nature of judgment and decision making. The object of the work will be to understand behaviors that promote organizational effectiveness and decision making.

The third way in which the NSF budget proposal addresses the changing requirements in science is through further development of science and engineering education programs. Assuming that the change we have noted in science will be a lasting one, then the ways in which potential scientists learn science will also need to change. The Foundation is proposing expanded activities at the K-12 level and at the undergraduate level to help guarantee that an adequate number of students with sufficient education in the sciences will be prepared for and will choose careers in science.

The proposed budget of the National Science Foundation reflects a logical and compelling attempt to adapt the programs of the Foundation to the changing needs of science. Science will continue to move toward greater integration of disciplines. If the Foundation is aided in its attempt to move along the same line of development as the sciences it supports, then one can expect the maximum return on the taxpayer's investment in scientific research. If the Foundation's efforts to adapt are hampered for yet another year, it is likely that a point will be reached where the structure of support at the Foundation will begin to work at cross-purposes with the emerging pattern of research.

It is the strong recommendation of the Federation of Behavioral, Psychological and Cognitive Sciences, therefore, that the Congress place a high priority on scientific research and particularly on this effort by the National Science Foundation to adapt to the changing needs of science. We support, and we urge the Congress to support, the three major thrusts contained in the NSF's proposed budget: Funding of the Centers Initiative, continued development of science and engineering education, and real growth in the research activities budget after three years of steady-state funding.

We thank the Subcommittee for this opportunity to offer our thoughts on the very direct relationship we see between the program priorities contained in the FY 1989 NSF budget request and the current state of interaction among the sciences.

STATEMENT OF DR. ARNOLD ALLENTUCH, ASSOCIATE VICE PRESIDENT FOR ACADEMIC AFFAIRS, NEW JERSEY INSTITUTE OF TECHNOLOGY, ON BEHALF OF THE AMERICAN ASSOCIATION OF STATE COLLEGES AND UNIVERSITIES

Senator DOMENICI. Dr. Arnold Allentuch, associate vice president for academic affairs of the New Jersey Institute of Technology, representing the American Association of State Colleges and Universities.

We welcome you, Doctor.

Dr. ALLENTUCH. Thank you. I present my testimony today on behalf of the 374 member institutions of the American Association of State Colleges and Universities, commonly called ASSCU. ASSCU institutions enroll over 2.5 million students and award one-third of the baccalaureate degrees given in this country.

We support the administration's proposed budget increase for the National Science Foundation and feel it provides a directive for continued long-term economic growth. We commend the administration for their efforts to double the National Science Foundation's budget over the next 5 years, a commitment that must continue if we want to successfully deal with the serious deficiencies that are crippling our national economy and security.

SCIENCE AND ENGINEERING EDUCATION FUNDING INADEQUATE

Although Congress awarded science and engineering education a $40 million increase over the administration's request last year, please note that when inflation is taken into account, the $139 million is about one-third of the level science and engineering education budgeted in the 1960's and remains critically inadequate.

In the 1950's, education received nearly 40 percent of the total Foundation budget, compared with its current portion of well under 10 percent. We understand the critical need for research, and we advocate support of the NSF research budget; but there is an imbalance in the increases.

The base for science and engineering education was started low and received only small increases. We cannot expect to regain our place in the international marketplace, balance our trade deficit, and reduce the loss of industry and jobs unless we have high quality scientific and technological training.

We urge that the committee again provide the additional funding necessary to bring the science and engineering education budget in line with the needs and support of other aspects of science and technology.

The current statistics are disturbing. Less than a quarter of high school students are qualified to do college level science or engineering; and in the cities of our nation, that percentage is substantially lower.

U.S. science students perform poorly when compared to children from 17 other developed countries. By 1995, the school age population will be composed of 40 percent minorities, a group that is dramatically underrepresented in science and engineering fields, yet the need for science and engineering personnel is expected to increase by 36 percent over the next 10 to 15 years; and the supply of new science and engineering graduates continues to decline.

Foreign graduate students represent 20 percent of all science and engineering graduate students in 1986, increasing at an average annual rate of almost 7 percent, compared to one-half a percent increase of U.S. students.

NSF's science and engineering programs play a significant role in dealing with these serious deficiencies. Your continued support for science education will allow for the improvement and expansion of programs that will make concrete advancements in the nation's scientific education system.

We commend the establishment of the Science and Engineering Education Office of Undergraduate Education, as directed in the National Science Board report; but we are troubled by the low level of funding it has received in comparison with the efforts called for by the National Science Board Report and other scientific and engineering societies.

To conclude, we urge this committee to take the necessary steps in approving fiscal year 1989 appropriations that adequately reflect the needs of precollege and undergraduate science education that are consistent with the critical nature of the problems we face. I appreciate this opportunity to address the committee today, and I will be happy to answer any questions you may have. Thank you.

Senator DOMENICI. Thank you very much.

[The statement follows:]

STATEMENT OF DR. ARNOLD ALLENTUCH, ASSOCIATE VICE PRESIDENT FOR ACADEMIC AFFAIRS, NEW JERSEY INSTITUTE OF TECHNOLOGY, ON BEHALF OF THE AMERICAN ASSOCIATION OF STATE COLLEGES AND UNIVERSITIES

Mr. Chairman, members of the Committee I am pleased to have the opportunity to testify on the 1989 appropriations for the National Science Foundation before the Committee today.

My name is Arnold Allentuch. I am Associate Vice President for Academic Affairs at the New Jersey Institute of Technology in Newark, New Jersey.

I would like to start by thanking Chairman Proxmire and the members of the Committee for your efforts on behalf of science education. Last year the Directorate for Science and Engineering Education received an increase of $40 million over the Administration's request. Your foresight and support made it possible to improve and expand Science and Engineering programs. These programs play a critical role in providing today's youth with the necessary high quality science and technological training that will prepare them for the future. We are grateful for your contributions.

I present my testimony today on behalf of the 374 member institutions of the American Association of State Colleges and Universities (AASCU). AASCU institutions enroll over 2 1/2 million students, and award 1/3 of all the baccalaureate degrees given in the country. Our institutions play a major role in the education of our nation's scientific manpower. Many students who ultimately pursue advanced degrees in scientific and technical fields receive their educational foundation at our institutions. AASCU institutions are also responsible for educating a large portion of the nation's future elementary and secondary school science and mathematics teachers. Teachers who will communicate the knowledge and skills that will enable our youth to live in an increasingly complex and technology - dependent society.

We support the Administration's proposed budget increase for the National Science Foundation (NSF) and feel it provides a directive for continued long-term economic growth. We commend the Administration for their efforts to double the National Science Foundation's budget over the next 5 years, a commitment that must continue if we want to successfully deal with the serious deficiencies that are crippling our nation's economy and security.

The predominantly undergraduate institutions of AASCU, primarily benefit from the programs offered under the Directorate for Science and Engineering Education (SEE). This portion of the budget, in particular, is of concern to us. We are happy to see science and engineering education begin to receive the long overdue recognition and financial support it deserves for its role in building the nation's science and engineering base. We applaud the requested increase and hope it is accepted as a foundation upon which to build for the future.

Although Congress awarded SEE a $40 million increase over the Administration's request last year, please note that when inflation is taken into account, the $139 million is about 1/3 of the level SEE was budgeted in the 1960's, and remains critically inadequate. As you can see from Chart A.2, in the 1950's education received nearly 40% of the total Foundation budget compared with its current portion of well under 10%. We understand the critical need for research and we advocate support of the NSF research budget. But there is an imbalance in the increases. The base for science and engineering education has started low and received only small increases. We cannot expect to regain our place in the international marketplace, balance our trade deficit, and reduce the loss of industry and jobs, unless we have high quality scientific and technological training. We urge that the Committee again provide the additional funding necessary to bring the SEE budget in line with the needs and support of other aspects of science and technology.

The current statistics are disturbing -

- less than a quarter of high school students are qualified to do college-level science or engineering.
- U.S. science students performed poorly when compared to children from 17 other developed countries, finishing near the bottom or last in their knowledge of biology, physics, chemistry, and other science subjects.
- by 1995, the school-age population will be composed of 40% minorities, a group that is dramatically underrepresented in science and engineering fields.
- yet, demand for science and engineering personnel is expected to increase by 36% over the next 10-15 years, and the supply of new science and engineering graduates continues to decline.
- foreign graduate students represented 20% of all science and engineering graduate students in 1986. Increasing at an average annual rate of almost 7%, compared to a .5% increase for U.S. students.

According to the 1986 National Science Board Report on Undergraduate Science, Mathematics, and Engineering Education, "Unless education in mathematics, engineering and the sciences is made more effective for all students and more attractive to potential faculty members, and especially to the presently underrepresented (women, minorities, and the physically handicapped), both the quality and number of newly educated professionals in these important fields will fall well below the nation's needs - with predictable harm to its economy and security."

NSF's Science and Engineering Education programs play a significant role in dealing with these serious deficiencies. Your continued support for science education will allow for the improvement and expansion of programs that will make concrete advancements in the nation's scientific education system.

The $16.8 million requested increase for Science and Engineering Education will support programs for:

- research experiences for undergraduate students
- instructional equipment and laboratory development

- professional enhancement activities for undergraduate faculty
- minority institution development
- curriculum development in calculus and engineering
- establishment of an early identification initiative for minority students with the potential for graduate study.

Over the years, economist have argued that education makes a specific positive contribution to the American economy. The advances in knowledge and changes in worker training each add significant support to the total productivity growth rate of our economy. The requested funding increase for Science and Engineering Education programs is a sound investment in our future, an investment that will maximize the return on scarce federal dollars.

We commend the establishment of the SEE Office of Undergraduate Education as directed in the National Science Board report. But we are troubled by the low level of funding it has received in comparison with the efforts called for by the National Science Board report and other scientific and engineering societies.

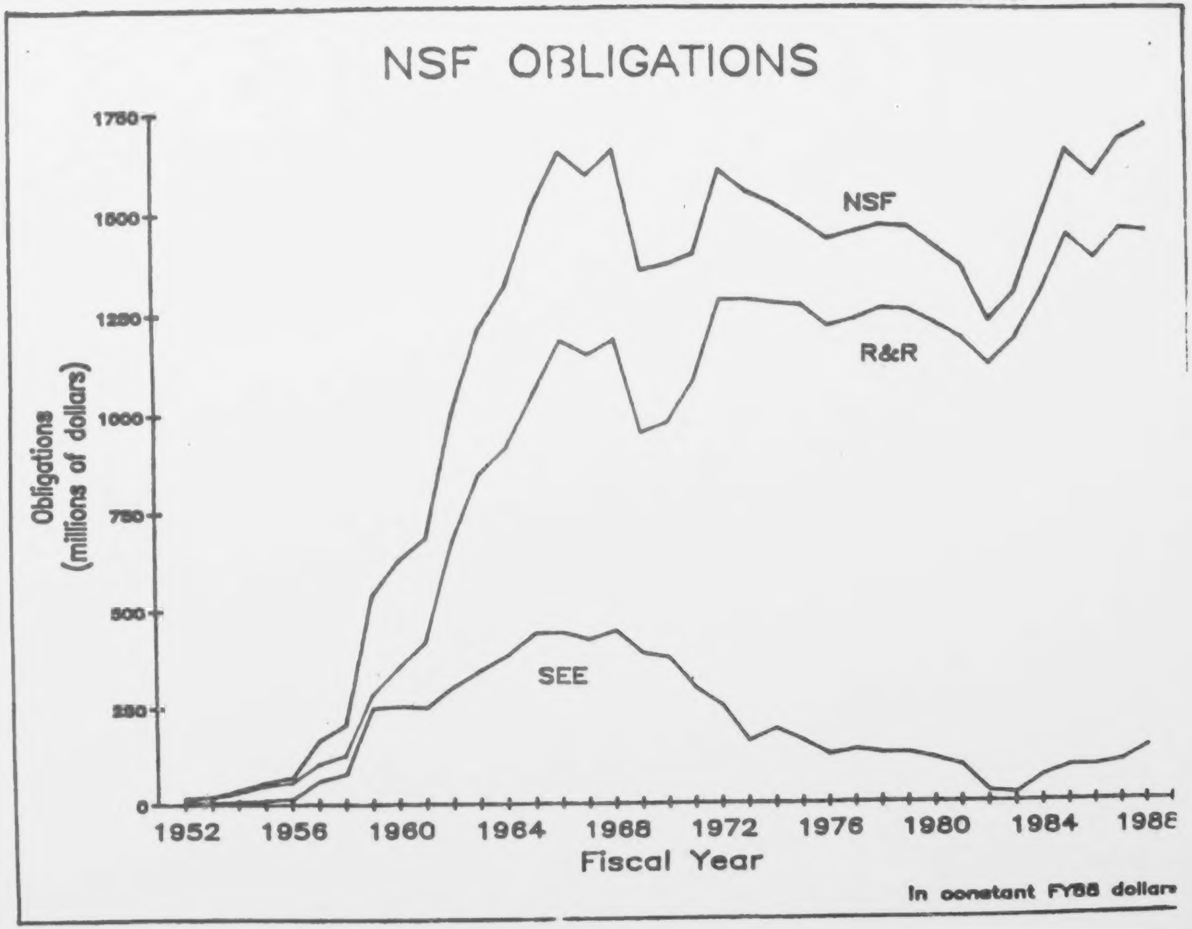
We also question the inefficient method of scattering other undergraduate programs across the Foundation. When placed in other Directorates, these programs have no clear line item or guarantee of being funded. This causes uncertainty and confusion in the community and impairs the leadership role of the Foundation. We feel that budgets supporting undergraduate education should be consolidated within the SEE Directorate. In this way all U.S. institutions of higher learning, whether universities or 2- or 4- year colleges, will be encouraged to pursue excellence in their teaching and instruction as well as in research.

As stated in the report, **A Nation at Risk**, "Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world. We report to the American people that while we can take justifiable pride in what our schools and colleges have historically accomplished and contributed to the United States and the well-being of its people, the education foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people. What was unimaginable a generation ago has begun to occur-others are matching and surpassing our education attainments."

To conclude, we urge this Committee to take the necessary steps in approving FY 89 appropriations that adequately reflect the needs of pre-college and undergraduate science education that are consistent with the critical nature of the problems we face. We cannot afford to ignore the significant impact that Science and Engineering Education programs have on our nation's long range economic welfare. The United States scientific strength and technological capability depend directly on the quality of the scientific education received by its students and on the numbers of students who enter scientific fields.

I appreciate having the opportunity to address the Committee today, and I will be happy to answer any questions you may have.

CHART A.1



NSF OBLIGATIONS

CHART A.2

Obligations for Science & Engineering Education
as percent of NSF Budget

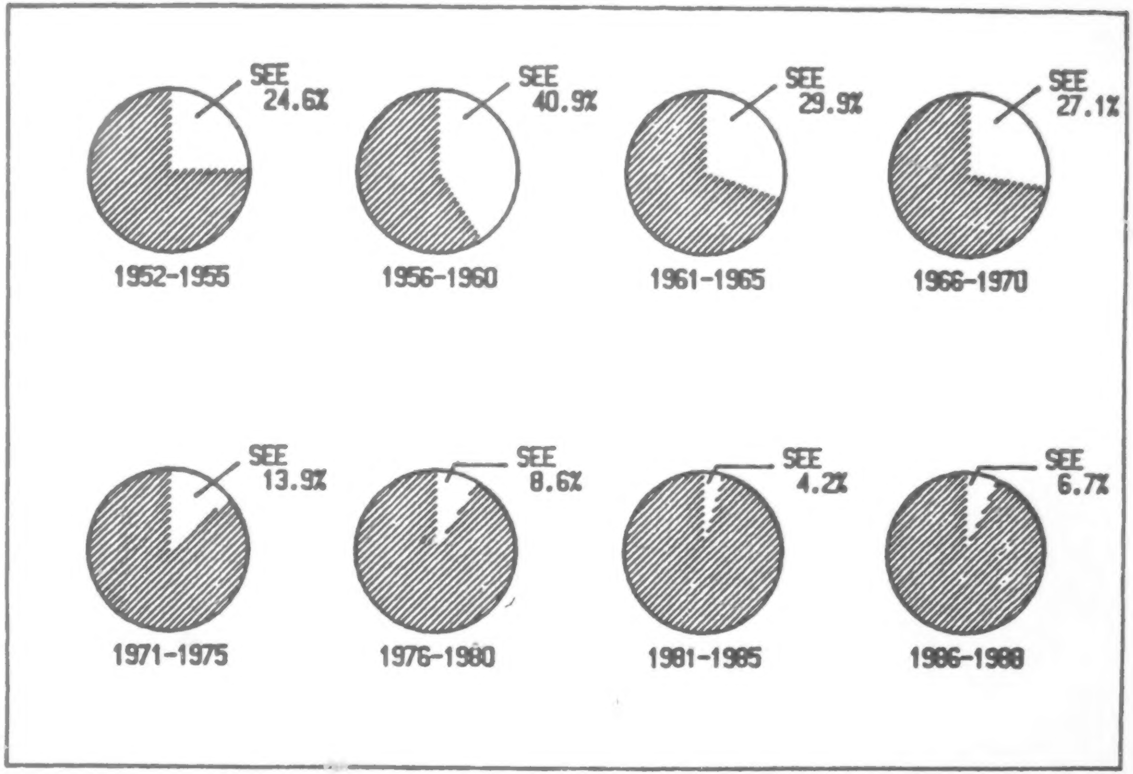
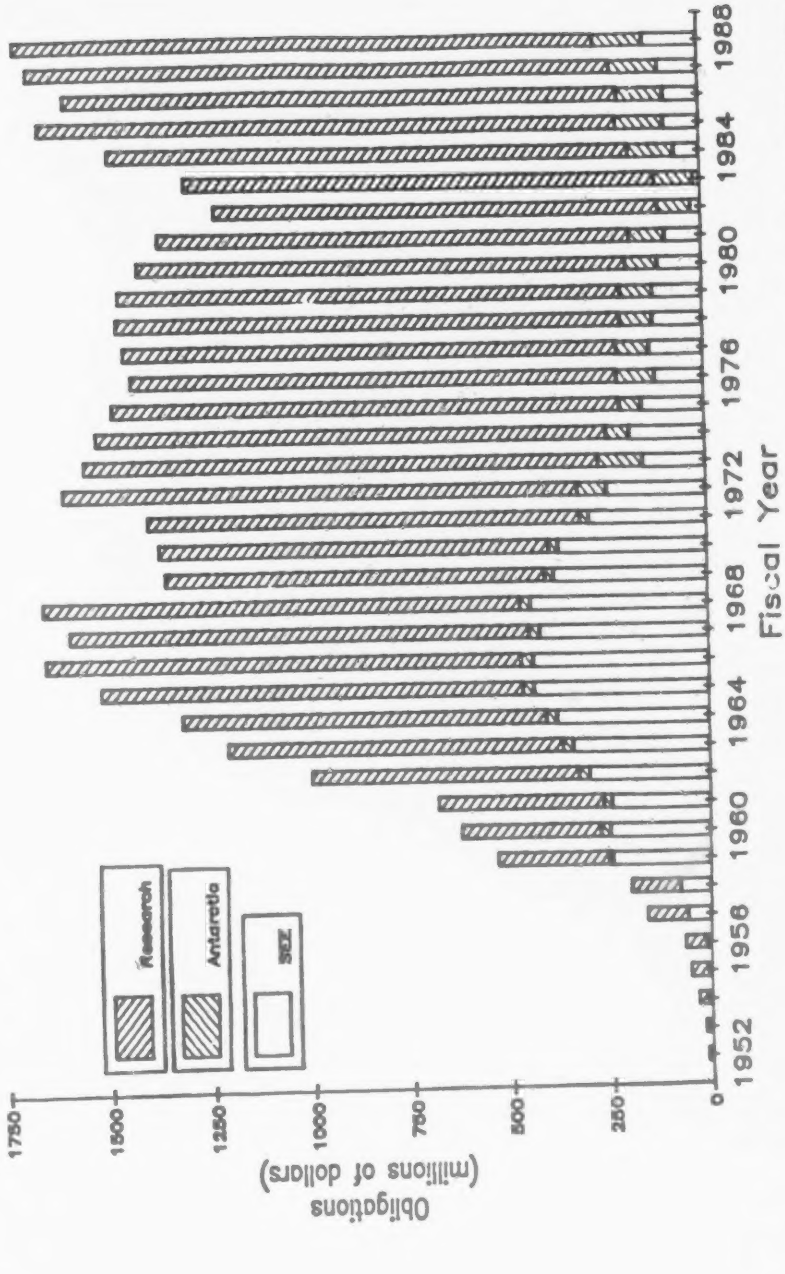
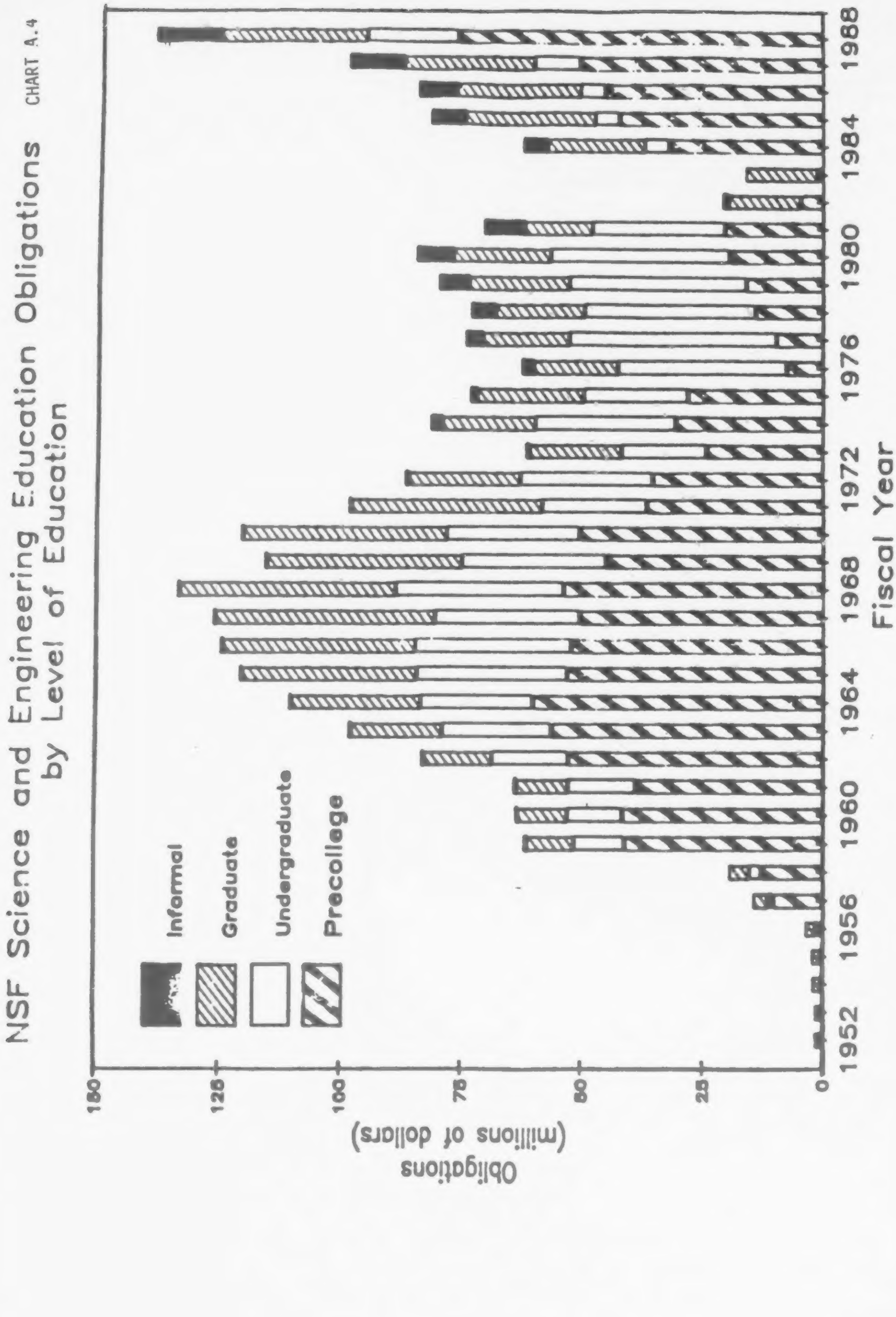


CHART A.3

NSF OBLIGATIONS



In constant FY88 dollars



NSF Science and Engineering Education Obligations by Level of Education

CHART A.4

FUNDING DIFFICULTY

Senator DOMENICI. We just want you all to know that your testimony and concerns are not going to go unheeded; but we have a very difficult problem in that, in order to fund the levels that the President requested—in this case, 20-percent increase in NSF—we might be arguing about how we allocate that among the various NSF functions—but in order to get the 20-percent increase, the President's recommendations are that certain programs like community development, waste treatment, and housing be significantly reduced and some 12 to 14 lesser programs be eliminated.

Some of us would go substantially in his direction, but as a Congress, that will be extremely difficult. So, we are not going to be able to find the 20 percent and the 30 percent for NASA, because we would have to do all the other cuts on the domestic side. We have a tendency to fund current problems, and the future has to be sacrificed.

I personally don't think that is a very good policy, but I just explain it to you as to what we will be confronted with; and you are all aware of that.

In other words, we get the money for the increases by dramatically reducing other programs, and it is pretty hard to get unanimity among the appropriators to do that kind of thing.

Thank you very much. We appreciate your testimony.

Senator D'Amato, are you going to take over now?

Senator D'AMATO. Yes.

Senator DOMENICI. Thank you.

Senator D'AMATO [presiding]. Thank you.

The next witnesses will be Mr. Curtis Tompkins, Dr. Charles Jones, Mr. Patrick McCurdy, Professor James Payne, and Professor Roberta Colman.

We will start off with Mr. Tompkins.

I think you have all been given the admonition regarding the time constraints. We will accept your testimony for the record as if read in its entirety. If you could attempt to come to the most important part, by way of a conclusion, we would be deeply appreciative.

All right, Mr. Tompkins?

STATEMENT OF CURTIS J. TOMPKINS, DEAN OF ENGINEERING, WEST VIRGINIA UNIVERSITY, ON BEHALF OF THE AMERICAN ASSOCIATION OF ENGINEERING SOCIETIES

Mr. TOMPKINS. Mr. Chairman, I am Curt Tompkins, dean of engineering at West Virginia University, and I am here representing the American Association of Engineering Societies. I am on the executive committee of the board of governors of that organization.

I am pleased to present our views on this year's budget request of the National Science Foundation. AAES is an organization of professional engineering societies; its member societies represent more than half a million engineers.

AAES endorses the NSF budget request for fiscal year 1989 of $2.05 billion. NSF's mandate in engineering is divided among three directorates: engineering, computer and information science and engineering, and science and engineering education. The engineering directorates work as the foundation of technological advances in computers, communications, manufacturing processes, and space technology; and we are pleased at the administration's proposing an increase of 13.7 percent in the directorate's budget over last year.

ENGINEERING RESEARCH CENTERS

AAES believes that the multidisciplinary Engineering Research Centers merit continued strong support. Projects being developed through ERCs promise major breakthroughs in important economic areas—for example, telecommunications, robotics, biotechnology, and the development of composite materials—vital areas that affect our international competitive position.

AAES also believes it is important that NSF maintain its traditionally strong support for basic engineering programs that support individual principal investigators involved with longer range engineering research.

Because of their revolutionary impact on communications and information processing, computers have changed the conduct of science and engineering in a host of ways, from modifying methods of research and redefining the meaning of state-of-the-art procedures to reshaping the ways in which students are taught in the classroom and participate in laboratory practice.

Thus, continued progress in computer science and engineering is vital, not only for the development of newer, more sophisticated computers and applications, but as a key element in other engineering disciplines.

COMPUTER AND INFORMATION SCIENCE AND ENGINEERING DIRECTORATE

AAES supports the Foundation's proposed 20.3-percent increase in the budget of the Computer and Information Science and Engineering Directorate. AAES strongly supports expansion of educational and human resource programs envisioned by the Foundation particularly, we believe, that continued support for NSF precollege mathematics and science programs is vital.

Our high school graduates must be well prepared and highly motivated or the nation will soon face a serious shortage of engineers and scientists to meet the ever-more demanding needs of government, industry, and academia.

Over the past several years, NSF has considerably upgraded its precollege activities, and we support NSF's role in this area. The Foundation has initiated measures designed to improve undergraduate engineering curricula and faculty development, as well as expand educational instrumentation and undergraduate research programs.

Creation of 100 additional graduate fellowships and 200 new Presidential Young Investigator Awards are the types of incentives that will encourage promising young graduate students to remain in academia and join the ranks of permanent faculty.

In addition to these measures, support for undergraduate and graduate education is carried out indirectly through Foundation funding for research projects. For example, most of the nearly 15,000 NSF-supported graduate students and research assistants are funded through faculty research grants.

AAES supports the major outlines of the fiscal year 1989 budget for the National Science Foundation and we praise the Foundation's strong commitment to engineering and scientific research and education. We also urge the Congress to carry through with substantial increases in the Foundation's budget over the next several years. Thank you.

Senator D'AMATO. Thank you very much. Dr. Jones.

[The statement follows:]

STATEMENT OF CURTIS J. TOMPKINS, EXECUTIVE COMMITTEE, BOARD OF GOVERNORS, AMERICAN ASSOCIATION OF ENGINEERING SOCIETIES

My name is Curtis J. Tompkins. I serve on the Executive Committee of the Board of Governors of the American Association of Engineering Societies, and I am pleased to present its views on the FY 1989 budget request for the National Science Foundation.

The American Association of Engineering Societies (AAES) is a multidisciplinary organization of engineering societies dedicated to advancing the knowledge, understanding, and practice of engineering in the public interest. The member societies of AAES, which represent over a half million engineers in industry, government, and education, include:

- American Society of Civil Engineers
- American Institute of Mining, Metallurgical and Petroleum Engineers
- American Society of Mechanical Engineers
- Institute of Electrical and Electronics Engineers
- American Society for Engineering Education
- American Institute of Chemical Engineers
- National Institute of Ceramic Engineers
- Institute of Industrial Engineers
- Society of Women Engineers
- Society of Fire Protection Engineers
- American Institute of Plant Engineers
- American Nuclear Society
- American Indian Science and Engineering Society

AAES endorses the NSF budget request for fiscal year 1989 of $2.05 billion. This request, which is a 19 percent increase over FY 1988, is an important step forward in NSF's effort to strengthen its research and development activity and is part of a long-term, sustained move toward improving its base for education and university basic research. AAES supports these measures.

Introduction

The NSF mandate in engineering is divided among three directorates: Engineering, Computer and Information Science and Engineering, and Science and Engineering Education. Each of these directorates is important to the nation's engineering enterprise, and we are pleased that in its budget request the Foundation has recognized the vital role of engineering education and research in strengthening U.S. economic competitiveness and quality of life. It is the educational and research opportunities presently open to our young engineers today that will allow the United States to meet the challenge of high technology in the twenty-first century.

Before discussing the specifics of the NSF budget, it is important to define the nature of engineering research. Engineering research is the pursuit of new knowledge about the technical processes and systems of the man-made world. It is closely related to scientific research, which seeks to understand the fundamental theories and systems of the natural world. While engineering research uses the foundation of scientific knowledge about the natural world, it has its own rules and laws and takes into account factors beyond science such as economics, aesthetics, and law.

Engineering and scientific research, while distinguishable, are mutually supportive in important ways. Information uncovered in the process of scientific research can lead to solutions to problems in engineering research, while advances in engineering stimulate scientific research.

Like scientific research, engineering research can be characterized as both "basic" and "applied." Basic engineering research seeks to provide a theoretical foundation for engineering principles and applications. For example, although ironmaking has been known for sixty centuries, only recently have the complex scientific and engineering principles underlying this process been revealed. While the ancient metalsmith could improve his craftsmanship through experience and trial and error, he lacked the knowledge of thermodynamics, heat transfer, and fluid mechanics that would have enabled him to guide his experimentation.

Applied engineering research builds on basic research, both in engineering and science, to find answers to specific technical problems. Applied engineering research may be viewed as the link between basic engineering and the development of new or improved products and services. Applied engineering research employs basic research in metallurgy to develop steel alloys to meet prescribed specifications. Applied engineering research is nearly always cross-disciplinary: in trying to solve engineering problems, it draws heavily upon knowledge developed in several engineering and scientific disciplines.

The Engineering Directorate

The work supported by the Engineering Directorate -- in both basic and applied engineering -- is the foundation of technological advances in computers, communications, manufacturing processes, and space technology, all areas that are vital to the nation's productivity and economic well-being. As more than half of the gains in U.S. productivity since World War II are the result of technological innovation, engineering research is clearly essential to further productivity gains.

We support the Administration's proposal to increase the budget of the Engineering Directorate by 13.7 percent in FY 1989, to $195 million. In recent years, the U.S. has been losing ground to its competitors. One contributing factor was the reduced emphasis on engineering research during the 1970s. The U.S. is now fourth among industrial countries -- behind Japan, West Germany, and France -- in the portion of gross national product invested in civilian research and development.

The multidisciplinary Engineering Research Centers (ERCs) merit continued strong support. While it is yet too early to gauge all the benefits that will come from the ERCs, they have already prompted significant intellectual activity, financial commitment, and cooperation in the academic community and gained strong financial support from industry. These centers reflect the trend toward interdisciplinary collaboration in addressing complex and urgent problems. They also provide unique opportunities for education and technology transfer. We believe that many exciting projects being developed through the ERCs could lead to major breakthroughs in telecommunications, robotics, biotechnology, and the development of composite materials.

While we approve the administration's emphasis on programs to enhance the nation's competitive position in world markets, we believe it is also important that NSF maintain its traditionally strong support for its basic engineering programs that support individual principal investigators involved with engineering research that is important for the long term vitality of engineering. Several engineering disciplines rely heavily on NSF grants for engineering research. In FY 1986, NSF supported 77 percent of all federally sponsored civil engineering research and 74 percent of all federal research in chemical engineering at universities and colleges. More importantly, NSF is the only agency whose purpose is to support both basic and applied long-term engineering research across all fields. This includes areas that may not appear to have immediate technological payoffs but may lead to breakthroughs in the future.

The Computer and Information Science and Engineering Directorate

Because of their revolutionary impact on communications and information processing, computers have changed the conduct of science and engineering in a host of ways: from modifying methods of research and redefining the meaning of state-of-the-art procedures, to reshaping the ways in which students are taught in the classroom and participate in laboratory practice. Thus, continued progress in computer science and engineering is vital not only for the development of newer, more sophisticated computers and applications but as a key element in other engineering disciplines.

AAES supports the Foundation's proposed 20.3 percent increase in the Computer and Information Science and Engineering Directorate budget to $149 million for FY 1989. We also support NSF's two-pronged initiative to support research into the fundamental understanding of computer and information science and engineering and to expand the availability of advanced computing systems and encourage participation in their use.

The Science and Engineering Education Directorate

Fundamental to engineering and computer research is engineering education. Without talented and well-educated individuals conducting first-rate research projects and teaching young engineers, the system will falter. For that reason, AAES strongly supports the expansion of educational and human resources programs envisioned by the Foundation.

Continued support for NSF precollege mathematics and science programs is vital. Our high school graduates must be well-prepared and highly motivated or the nation will soon face a serious shortage of engineers and scientists to meet the ever more demanding needs of government, industry, and academia. Over the past several years, NSF has considerably upgraded its precollege activities and we support NSF's role in this area.

Of special significance to the engineering community is the Foundation's initiative in undergraduate education. In the 1970s and early 1980s, undergraduate education was barely addressed at the Foundation. However, since FY 87 NSF has begun to redress this imbalance and this year plans to spend up to $65 million on undergraduate education. The measures the Foundation has initiated are designed to improve undergraduate engineering curricula and faculty development, as well as expand educational instrumentation and undergraduate research programs. Unlike the physical and life sciences where most practitioners in the field are required to have advanced degrees, more than two-thirds of the nation's 1.5 million engineers have received only a bachelors degree. Their four years of college education provide an essential basis for professional development programs throughout their careers.

NSF support for undergraduate engineering education also serves as a catalyst for colleges and universities to revitalize their curricula and to modernize engineering laboratories. Programs to foster experimentation in faculty development permit faculty members to update their technical knowledge and enhance their teaching skills. Greater undergraduate participation in research exposes students to the benefits of an academic career.

Expansion of graduate programs at NSF forms another key link in the system. The NSF has maintained its graduate fellowship programs over the past several years. Creation of one hundred additional graduate fellowships and two hundred new Presidential Young Investigator awards are the types of incentives that will encourage promising young graduate students to remain in academia and join the ranks of permanent faculty.

In addition to these measures, support for undergraduate and graduate education is carried out indirectly through Foundation funding for research projects. For example, most of the nearly 15,000 NSF-supported graduate students and research assistants are funded through faculty research grants.

Summary

Overall, we in the engineering community support the major outlines of the FY 1989 budget for the National Science Foundation and praise the Foundation's strong commitment to engineering and scientific research and education. Accordingly, we urge the Congress to carry through with substantial increases in the Foundation's budget over the next several years. This increase will help NSF balance its support for programs that foster economic vitality with those that ensure the long-term health of basic engineering research. It can make a real contribution to the nation's economic well-being.

We appreciate the opportunity to present AAES' views on the FY 89 National Science Foundation budget.

STATEMENT OF CHARLES O. JONES, PH.D., VISITING FELLOW, BROOKINGS INSTITUTION, ON BEHALF OF THE CONSORTIUM OF SOCIAL SCIENCE ASSOCIATIONS

Dr. JONES. Senator, I am Charles Jones, a professor of government at the University of Virginia and presently a visiting fellow at the Brookings Institution.

I appear today on behalf of the Consortium of Social Science Associations, known as COSA, which represents more than 185,000 American scientists across the full range of the social and behavioral sciences. It functions as a bridge between the research world and the Washington community.

RESEARCH AND RELATED ACTIVITIES

COSA strongly supports the proposed increased for NSF in the fiscal year 1989 budget and the continued commitment to doubling the Foundation's resources. The administration's advocacy of increased support for America's scientific endeavors reflects an understanding that more basic research today means greater scientific and technological achievement tomorrow.

We urge the subcommittee to approve the full NSF increase as representing that kind of investment. The 10-percent increase for research and related activities is also welcome. We urge the maintenance of that increase during the subcommittee's deliberations.

Since 1985, funding for research and related activities has been flat in real terms. Support for the core research program is critical to a balanced investment portfolio at the Foundation.

The 8-percent increase for the Social and Economic Science Division and the 6-percent increase for the behavioral programs of the Behavioral and Neurosciences Division, while not as large as needed, reflect continued NSF support.

SOCIAL AND BEHAVIORAL SCIENCES RESEARCH FUNDING DECREASE

A recent report of the National Research Council on Behavioral and Social Sciences Achievements and Opportunities notes that the decline of federal support for these disciplines in the last 15 years has been 25 percent in constant dollars.

During the same period, federal support for other fields of scientific research has grown by 36 percent. Funding for NSF has increased significantly in the past 8 years, as it should; yet the share of those funds going to social and behavioral sciences research has continued to decrease.

In light of the recommendations of the National Academy Report, we urge the subcommittee to encourage NSF to augment its funding of the social and behavioral sciences, a wholly justifiable request given the intellectual vitality of these disciplines.

The National Academy report identifies five fundamental areas where researchers face extraordinary challenges and opportunities to develop their work in multidisciplinary fields and activities. These areas of research are identified in the statement prepared for the record.

POLITICAL SCIENCE DISCIPLINE

Within my own discipline of political science, NSF funding has resulted in research projects for which other support is often not available. Though the total amount of support made available is small, the payoff in published findings, data collection, and policy relevant research is impressive.

The national election studies are familiar to many and to this subcommittee. In addition, however, are such diverse projects as comparisons of state legislatures, foreign policy decisionmaking, historical development of legislatures, the Presidential nominating process—which as we all know could use a little research—the judicial appointment process, adaptations to tax reform, changes in the federal bureaucracy.

Most grants on these topics are for less than $50,000; typically, the data collected by these researchers are made available to other scholars through various archives, primarily the Interuniversity Consortium for Political and Social Research at the University of Michigan.

There are countless examples of the usefulness of the data and research studies to policymakers and, indeed, to political parties and candidates.

The significant research achievements of social and behavioral scientists are well known to this subcommittee, and you have repeatedly demonstrated your belief that these accomplishments are important to the national scientific enterprise.

The Congress continues to call on us to present the results of our research so as to assist policymakers in making decisions. In the first three months of the 100th Congress, over 85 university-based social and behavioral scientists have been witnesses before congressional committees. Offering such expert advice and technical information depends on basic research capability and support. We ask you to support our future efforts by granting NSF its full fiscal year 1989 budget request. Thank you for this opportunity.

[The statement follows:]

STATEMENT OF CHARLES O. JONES, PH.D., VISITING FELLOW, BROOKINGS INSTITUTION, ON BEHALF OF THE CONSORTIUM OF SOCIAL SCIENCE ASSOCIATIONS

Mr. Chairman and Members of the Subcommittee: I am Charles O. Jones, a professor of government at the University of Virginia and presently a Visiting Fellow at the Brookings Institution. In the fall I will join the faculty of the Department of Political Science at your home-state institution, Mr. Chairman, the University of Wisconsin-Madison. I was on the Social Science Research Council for six years, chairing the Executive Committee for two years. I appear today on behalf of the Consortium of Social Science Associations (COSSA) which represents more than 185,000 American scientists across the full range of the social and behavioral science disciplines. It functions as a bridge between the research world and the Washington community. A list of COSSA Member associations, Affiliate societies, and Contributor institutions is attached. I am here to discuss the proposed FY 1989 budget for the National Science Foundation (NSF) and some of the issues raised by that budget, particularly as applied to social and behavioral science research.

We strongly support the proposed overall increase of 19.4 percent in the FY 1989 budget and the continued commitment to doubling the Foundation's resources. The $333 million increase represents an incremental step for investing in the future greatness of this nation. In this era of budgetary restraint, the administration's advocacy of increased support for America's scientific endeavors reflects an understanding that more basic research today means greater scientific and technological achievement tomorrow. Reducing that commitment will decrease the nation's ability to compete in the interdependent world of the twenty-first century. We urge the Subcommittee to accept the full NSF increase.

The 10 percent increase for Research and Related Activities is also welcome. We strongly urge the maintenance of that increase during the Subcommittee's deliberations. Since 1985 funding for Research and Related Activities has been flat in real terms. Support for the core research program is critical to a balanced investment portfolio at the Foundation. The 8 percent increase for the Social and Economic Science Division and the 6 percent increase for the behavioral programs of the Behavioral and Neural Sciences Division, while not as large as necessary, reflect continued NSF support for these programs.

A recent report of the National Research Council, The Behavioral and Social Sciences: Achievements and Opportunities, notes that the decline of federal support for these disciplines in the last fifteen years has been 25 percent in constant dollars. By contrast, during the same period, federal support for other fields of scientific research has grown by 36 percent. Funding for NSF has increased significantly in the past eight years, yet the share of those funds going to social and behavioral science research has continued to decrease (from 6.1 percent in FY 1980 to 4 percent in the proposed FY 1989 budget). In calling for new federal funding of $240 million for the social and behavioral sciences, the aforementioned report asks that NSF contribute $60 million. Spread over three years and including support for new fellowships, this request could be met by increasing funding so that 5 percent of the FY 1989 Research and Related Activities budget goes to social and behavioral science research. In light of the recommendations of the National Academy report we urge the Subcommittee to encourage NSF to augment its funding of the social and behavioral sciences. We believe this is justifiable given the intellectual vitality and ferment of these sciences and their importance to the nation.

The NRC report presents a significant picture of the vitality, ferment, and contributions of these disciplines. Although meant to be illustrative and not exhaustive, the report identifies five fundamental areas where researchers face extraordinary challenges and opportunities to develop their work in multidisciplinary fields and activities if they are given sufficient support. These areas include:

1) research linking behavior, the mind, and brain focusing on seeing and hearing, memory, cognition, decision making, and language acquisition;
2) research on the motivational and social contexts of behavior focusing on affect and motivation, health and behavior, crime and violence, and social interaction;

3) research on choice and allocation looking at agenda setting, voting behavior, organizational design and change, markets and economic systems, bargaining and negotiation, and jobs, wages, and careers;

4) research on institutions and cultures, investigating the evolution of human society, demographic behavior, family and religion, science, technology, and public policy, internationalization, and international conflict; and

5) research to improve the methods of collecting and analyzing data, examining data collection designs, formal models, and statistical inference and analysis.

All of these would benefit from increased interdisciplinary cooperation and increased federal support.

The proposed FY 1989 NSF budget for the social and behavioral sciences further reflects the emphasis on multidisciplinary activity. The new National Center for Geographic Information and Analysis (NCGIA) will provide greater access to the products of digital remote sensing, geographic information systems, computer cartography, and computer graphics, which will form the basis for major advances in geographical analysis, spatial statistics, and expert systems. The enhanced information-portrayal and decision making capacities resulting from such theoretical advances will enable scientists and policy makers more effectively to resolve the complex environmental and social issues the nation faces now and in the future. This center will involve expertise in disciplines including geography, information science, computer graphics, political science, remote sensing, risk analysis and many others. Commercial vendors, government agencies, and research universities will share in the services that will be provided by the NCGIA.

The Decision, Risk, and Management Science Program (DRMS) will continue to strengthen its efforts to encourage collaborative interdisciplinary research across the decision sciences. Three broad problem areas remain the focus for exploration: 1) risk perception, communication, and management; 2) group decision making; and 3) artificial intelligence approaches to problem structuring and model building for decision support. Here too the number of disciplines involved is large: from artificial intelligence and expert systems to political science, psychology, and sociology to organization design and general systems theory.

In the behavioral sciences the major initiative in the neurobiology of learning and memory will continue to include increased support for multidisciplinary research teams, and the establishment of a small number of multidisciplinary research and resource centers. Greater elucidation of the neural structures and processes which underlie the phenomena of learning, memory, and information utilization continues to be the goal of this research.

Studies of organizational effectiveness are another major cross-disciplinary effort needing enhanced support. Research on structural constraints to effective use of human resources, management decision-making, small group interactions, and organizational evolution will produce information to help America respond to the many economic productivity questions it faces, e.g. organizational resistance to high-tech innovation adoption and the impact of organizational morale on productivity. An attempt will be made to create a data base from a national sample of organizations which will allow for tracking over time of changes in structure and effectiveness. Sociologists will be able to conduct cross-level analyses comparing individual-level data with organizational-level data. Economists will pursue the development of a conceptual paradigm to explain organizational effectiveness through the use of game theory models, institution design mechanisms, and public choice models. Payoffs from this basic research can already be seen in deregulation activities and in acceptance by businesses of worker profit sharing as an incentive for low unemployment and greater productivity. Interdisciplinary studies of behavioral theories of business firms will also lead to better understanding of organizational performance.

These significant initiatives in geography, decision, risk and management science, psychobiology, and organizational effectiveness are indications from NSF that the social and behavioral sciences are an important part of the Foundation's agenda for economic competitiveness. All were adversely affected by the reduction from the FY 1988 request in the FY 1988 appropriations. Granting the full increment for Research and Related Activities for FY 1989 will allow these important research initiatives to go forward without curtailing ongoing projects in the social and behavioral science disciplines. This includes support for large scale, multi-user data bases such as the Panel Study of Income Dynamics, the General Social Survey, the National Election Studies, and the Supreme Court Data Base, which provide researchers and public policy makers enormous amounts of useful information.

Within my own discipline of political science, NSF funding has resulted in research projects for which other support is often not available. Though the total amount of support made available is very small, the payoff in published findings and data collection is impressive. The national election studies are familiar to the Subcommittee. In addition, however, are such diverse projects as comparisons of state legislatures, foreign policy decision making, historical development of legislatures, the presidential nominating process, the judicial appointment process, adaptations to tax reform, changes in the federal bureaucracy. Most grants on these topics are for less than $50,000. Typically the data collected by these researchers are made available to other scholars through various archives--primarily the Inter-University Consortium for Political and Social Research at the University of Michigan.

In addition, the proposed budget provides for increased support for social and behavioral science research on global change. A major international effort to expand our understanding of this phenomenon is underway. Groups such as the American Association for the Advancement of Science, Sigma XI (The Scientific Research Society), the International Conference of Scientific Unions, and the International Social Science Council, are involved in seeking answers to this worldwide challenge. Social and economic research in this area will enhance comprehension of the effect of regulatory, industrial, and agricultural policies on the biology, chemistry, and geology of the earth. This is also an area where the social and behavioral sciences will interact with the natural and physical sciences to produce information to help policy makers deal with an important problem. Support for NSF's full FY 1989 request will sustain this effort.

COSSA also supports increased funding for the Studies in Science, Technology, and Society program in the new Division of Instrumentation and Resources. Interdisciplinary research on history, philosophy, social, and ethical issues of science and technology reveals where we have been, how we got where we are, and the methods we can live with to get where we are going.

NSF's request for a separate appropriation of $150 million for the long-term support of science and technology centers has raised concern. Support for centers is often seen as coming at the expense of individual investigator-initiated research. For the social and behavioral science disciplines, the individual investigator remains the key to significant basic scientific research. Yet there is a place for centers in these disciplines as well. The Foundation has received 325 proposals for its Science and Technology Centers program. A number of these are in the social and behavioral sciences, and a significant number is in the multidisciplinary fields of cognitive science and artificial intelligence. We ask the Subcommittee to fund the centers at the requested level so the Foundation will not have to sacrifice the individual investigator to save the Centers program or vice-versa. We also believe the Subcommittee should keep a wary eye on this situation since the long-term effects of support for such centers is unknown.

COSSA also supports the 12 percent increase proposed for the Science and Engineering Education Directorate. It represents a further step in the reinvigoration of that directorate. The proposed increase in the number of graduate fellowships will enhance the development of a new generation of scientists and researchers to produce the knowledge of tomorrow. We agree with NSF's strategy to provide resources for undergraduate education within the disciplines. This is the best means for the integration of research and training for undergraduate social and behavioral scientists. We also applaud the increase for research in teaching and learning, an arena in which behavioral scientists play an important role.

The significant research achievements of social and behavioral scientists are well known to this Subcommittee. You have demonstrated time and again your belief that these accomplishments are important to the national scientific enterprise. The Congress continues to call on us to present the results of our research so as to assist policy makers make decisions. In the first three months of the second session of the 100th Congress over 85 university-based social and behavioral scientists have been witnesses before congressional committees. Offering such expert advice and technical information depends on basic research capability and support. We ask you to support our future efforts by giving NSF its full FY 1989 budget request.

Thank you for this opportunity to present our views.

Consortium of Social Science Associations

Members

American Anthropological Association
American Economic Association
American Historical Association
American Political Science Association
American Psychological Association
American Sociological Association
American Statistical Association
Association of American Geographers
Association of American Law Schools
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American Society of Criminology
Association for Asian Studies
Association for the Social Sciences in Health
Eastern Sociological Society
Federation of State Humanities Councils
Gerontological Society of America
History of Science Society
International Studies Association
Law and Society Association
Midwest Sociological Society
National Council on Family Relations
National Council for the Social Studies
North Central Sociological Association
Northeastern Anthropological Association
Operations Research Society of America
Population Association of America
Regional Science Association
Rural Sociological Society
Social Science History Association
Society for the History of Technology
Society for Research on Adolescence
Society for Research in Child Development
Society for the Scientific Study of Religion
Southern Sociological Society
Southwestern Social Science Association
Speech Communication Association
The Institute of Management Sciences

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Harvard University
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University of Illinois
Indiana University
Institute for Research in Social Science, UNC-Chapel Hill
Institute for Social Research, University of Michigan
University of Iowa
The Johns Hopkins University
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Massachusetts Institute of Technology
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University of Wisconsin, Madison
University of Wisconsin, Milwaukee
Yale University

STATEMENT OF PATRICK P. MCCURDY, AMERICAN CHEMICAL SOCIETY, WASHINGTON, DC

Senator D'AMATO. Now, we will hear from Patrick McCurdy on behalf of the American Chemical Society.

Mr. McCurdy?

Mr. MCCURDY. Mr. Chairman and members of the subcommittee, my name is Patrick McCurdy, and I am here today on behalf of the American Chemical Society to comment on the fiscal year 1989 appropriations for the National Science Foundation. I would like to request that the complete text of the society's statement be entered into the hearing record.

This nation's technological competitiveness depends significantly upon continued long-term support for both basic research and education at our colleges and universities. Only such support will allow us to extend our knowledge base, train our future scientists and engineers, and restore scientific literacy in general.

CHEMICAL SCIENCES AND ENGINEERING DISCIPLINES

Research performed in the chemical sciences and engineering disciplines benefits our leading industries, the makers of pharmaceuticals, of organic and inorganic specialty chemicals, of resins, of rubbers, of fertilizer, and of plastics. These science and technology driven industries represent a key basic foundation for our national economy, and their products are essential to our health and well-being.

They also play a vital role in our international trade picture. Last year, for example, the chemical and allied products sector—one of the few sectors that consistently has had a positive trade balance—exported $9.3 billion worth more products than were imported.

Now, we are well aware of the budget constraints that this committee faces, but we believe that strong support for research and education is vital and overriding in terms of investment in this nation's future.

CHEMISTRY AND MATERIALS RESEARCH DIVISIONS

The ACS is discouraged that only modest increases are proposed for the Divisions of Chemistry and Materials Research in NSF's 1989 budget request. The 5.2 increase in chemistry and the 7.2-percent increase in materials research will not allow researchers to fully exploit the many opportunities before them.

Let me cite two examples of such opportunities.

Recently, Dr. Donald Cram of UCLA won the Nobel Prize in Chemistry for his research in his so-called host-guest chemistry, which was supported for 30 years by NSF. His work involving molecules that mimic enzymes and can capture small molecules will have a great impact on many fields of study.

Another NSF-sponsored research effort has resulted in discovery of a new chemical method that destroys polychlorinated hydrocarbons, such as PCB's.

The American Chemical Society recommends that an additional $4.5 million be added to the budget for the Chemistry Division, and we further recommend that the Materials Research Division receive an additional increase of at least $3 million above the fiscal year 1989 request.

This increase will allow the Foundation to adequately fund superconductivity research and materials research groups, while providing additional funding to hard-pressed areas, such as polymers research and instrumentation. The ACS is pleased that the Chemical, Biochemical, and Thermal Engineering Division does receive a 10.4-percent increase.

And the society supports the interdisciplinary Science and Technology Centers Program at the requested level of $150 million, as a viable method of funding research. However, should budget constraints occur, funding for the S&T centers should not come at the expense of the Foundation's request for individual investigator research.

Finally, the ACS is concerned about the state of science and engineering education in the United States. The well-documented crisis in U.S. science, engineering, and mathematics education continues.

In fact, in cost of dollars, the level of support for science and engineering education, or SEE, directorate programs under fiscal year 1989 current plan, is only one-fourth the level of same in the fiscal year 1968 NSF budget for education, yet there are 50 million more Americans to educate.

An increase to $50 million in fiscal year 1989 should be allocated to the SEE Directorate to address the problems of teacher retraining and recruitment, instrumentation needs, and minority and female recruitment into the sciences. The additional funding requested by ACS is $33 million above the budget proposed by the administration and should be new monies added to the Foundation's budget proposal, we feel.

We thank you for this opportunity to testify before the subcommittee today. I would be pleased to try to answer any questions you may have.

Senator D'AMATO. Thank you.

[The statement follows:]

Statement of Patrick P. McCurdy on Behalf of the American Chemical Society

My name is Patrick P. McCurdy and I am here today on behalf of the American Chemical Society (ACS) to comment on the FY 1989 appropriations for the National Science Foundation.

The Nation's technological competitiveness depends significantly upon continued long-term support for basic research and education at our universities and colleges. Without such support, the U.S. cannot extend the knowledge base of the basic sciences and engineering, which lays the foundation for innovation and new product development. Nor can the U.S. train and educate the next generation of scientists and engineers who will be needed to develop products, to perform research, and to restore scientific literacy. To provide the necessary support for a healthy academic system and to ensure a continuing supply of scientifically trained employees for industry's needs, the American Chemical Society, recognizing the existing bipartisan support for these goals, strongly urges the Subcommittee to begin a five-year doubling of the National Science Foundation's budget in FY 1989.

The research disciplines have lost valuable ground due to budget constraints over the past three years. A healthy discipline is built on research conducted in the core fields and at the frontiers of science; it depends upon adequate instrumentation and facilities. For fifteen years, U.S. investment in civilian R&D as a percentage of GNP has lagged far behind that of West Germany and Japan, and the difference is growing. Now France has passed the U.S.

The Society is pleased that there are proposed increases for the NSF Divisions of Chemistry, Materials Research, and Chemical, Biochemical, and Thermal Engineering. ACS is supportive of the new and continuing interdisciplinary research thrusts, as well as the cross-directorate human resource and education initiatives that are funded in them. However, after three years of budget constraints, the underfunding of base research programs is growing and must be rectified.

The individual researcher and established research groups are hard-pressed for funding. They are looking to the FY 1989 budget for funding to address the research opportunities before them. With this in mind, the American Chemical Society makes the following recommendations:

- In order to exploit the enormous research potential in the chemical sciences and technologies, the ACS recommends that $4.5 million be added to the budget of the Chemistry Division, and that an additional $3.0 million be added to the budget of the Materials Research Division, as a first step towards providing adequate support for individual investigators. The funding level proposed for the Chemical, Biochemical, and Thermal Engineering Division should be viewed as the minimum level necessary in the fields supported.

- The Society supports the Science and Technology Centers program, at the requested level of $150 million, as a viable method of funding research. However, should budget constraints occur, funding for the S&T Centers should not come at the expense of the Foundation's requests for individual investigator research. The program also should be monitored closely by the Office of Science and Technology Centers in order to measure its contribution to the health of the sciences and its impact on the research base.

An effective system of science and engineering education is vital to the long-term interests of the United States. The Nation is falling behind developed and developing countries in the quality of scientific education. Science literacy is declining. Our prosperity and national security depend on having enough well-trained scientists and engineers to respond to national needs. Therefore, the American Chemical Society recommends:

- An increase of $50 million in FY 1989 be allocated to the Science and Engineering Education (SEE) Directorate to address the problems of teacher retraining and recruitment, instrumentation needs, and minority and female recruitment into the sciences. SEE is the primary focal point for NSF's educational activities. Since its reinstatement in 1985, the Division has labored to match its past levels of effort. This increase will begin a steady march toward that goal. The additional funding requested by ACS is $33 million above the budget proposed by the Administration and should be new monies added to the Foundation's budget proposal.

The accompanying Appendix provides greater detail on the Society's recommendations. The ACS believes that the work accomplished by the Foundation contributes to the economic well-being of our Nation. Thus, it is imperative to provide increased support to the National Science Foundation even in a time of budget constraint.

APPENDIX

The Nation's future research capability depends upon the teaching and education afforded to our students through government-sponsored research. Our industry's ability to compete rests upon the technological advances made through basic research. Central to these activities is the National Science Foundation, which funds research and education activities at all levels, and is the principal funding source for nonmission-oriented basic research. Recognizing the existing bipartisan support for improving these areas, the American Chemical Society strongly supports a five-year doubling of the NSF budget beginning this year.

While the Foundation's budget is slated to increase 19 percent in FY 1989, the Research and Related Activities (R&RA) category, however, is scheduled to increase by only 10 percent. Nearly 60 percent of the funding within R&RA will support individual investigators--a single researcher in a laboratory with graduate students. Much of our national scientific advancement has grown from these roots. The funding received by these individual investigators benefits not only the research and the student, but the institution as well, strengthening and improving the U.S. education enterprise nationwide.

Individual investigators are aware of NSF's attempt to begin doubling its budget in FY 1988. They also are painfully aware that that goal was not achieved. For FY 1988, R&RA received a 3 percent increase, somewhat less than inflation.

The health of academic research and education in chemical sciences, materials science, and chemical engineering is essential to continued U.S. economic competitiveness, particularly in the chemical and allied industries; a sector of the economy that has a growing positive trade balance. This strong showing is related to the academic infrastructure that supports it.

NSF is a primary player in assuring continued competitiveness through its funding of: (1) 40 percent of all the academic chemistry research sponsored by the federal government; (2) 84 percent of all the federally-funded academic chemical engineering research; and (3) about 50 percent of all the academic materials research conducted with federal funds.

The ACS is discouraged that modest increases are proposed for these fields in NSF's FY 1989 budget request. The 5.2 percent increase in the Chemistry Division and the 7.2 percent increase in the Materials Research Division will not allow researchers to exploit the opportunities before them. The Society is pleased that the Chemical, Biochemical, and Thermal Engineering Division does receive a 10.4 percent increase. Synergism exists among these fields, and extends to joint initiatives at the research frontiers. The comments that follow focus on the individual NSF divisional activities first, then on the synergistic relationships.

Chemistry Division

The FY 1988 budget for the Chemistry Division increased one-half of one percent (0.5 percent) over FY 1987. Although the dollar amount of the Division's awards are equal to the FY 1987 level, fewer awards actually will be made. For those who received awards or renewals of current grants early in FY 1988, the dollars received were less than expected. Programs are being operated at reduced levels--Inorganic, Bioinorganic, and Organometallic Chemistry; Organic and Macromolecular Chemistry; Physical Chemistry; and Chemical Instrumentation are below the FY 1987 level of support. Chemical Instrumentation, in fact, is operating at less than the 1984 support level. Given the current funding level, it is unlikely that the Chemical Instrumentation Program will be able to continue to fund maintenance of large-scale instrumentation, a plan that just began this year. The Society strongly urges the Foundation to take every effort to bring the Chemical Instrumentation Program back to the equivalent level of funding that was available in FY 1987. State-of-the-art, shared-use equipment in our Nation's university laboratories is crucial to the health of the U.S. research enterprise. It is essential that NSF continue its strong support in this area.

The FY 1989 budget request includes a 5.2 percent increase for the Chemistry Division. While the FY 1989 budget increases support for new, interdisciplinary research initiatives in materials chemistry, the ACS is concerned that these initiatives are being pursued at the same time that disciplinary research is being underfunded.

Finally, the Society commends NSF for its initiation of the Postdoctoral Fellowships in Chemistry awards. These are three-year awards that may be converted, in their final year, to academic starter grants. The ACS regrets, however, that this program was only able to move forward in 1988 at one-half its intended level. The American Chemical Society supports the $1.5 million FY 1989 increment for this program and hopes to see continued emphasis within the Division for these awards.

Materials Research Division

In the Materials Research Division a similar pattern of erratic funding is found. While the proposed FY 1989 budget increases 7.2 percent, that increase follows three years of small but variable increases. In FY 1986, the budget decreased due to sequestration under the Gramm-Rudman-Hollings law. In FY 1987 and FY 1988, the budget increased 4.3 percent and 2.1 percent, respectively, yet this represents only one-third and one-fifth of the increases requested to meet the Division's needs, due to increased academic research proposals in this area.

The FY 1988 budget increase is below inflation and only permits operation of some programs at their FY 1987 level or below. The Materials Research Groups program will fund one of the three to four additional groups originally planned in 1988. The Materials Research Instrumentation Program was cut 18.5 percent in FY 1988, bringing instrumentation funding to below 1984 levels. As with instrumentation funding in the Chemistry Division, ACS urges that every effort be made to restore this program at least to levels equivalent to FY 1987.

The Materials Research Division supports numerous activities that are on the forefront of high technology, notably, solid state chemistry, polymers, and ceramic and electronic materials. NSF is, in fact, the predominant source of federal funding in solid state chemistry since the Department of Defense funding for basic research has declined. The seriousness of this situation in the Materials Research Division is evidenced in the lost opportunities that are stymieing polymer research. During the past twelve years, the number of academic investigators has risen from about 200 to over 850; yet individual investigator proposals funded during the same period have declined from 94 to 92. Funding needs in basic polymer research are not being met.

ACS is pleased that the Materials Research Groups program is slated to receive a 20.3 percent increase in FY 1989. The proposal pressure in this program has been increasing since its inception in FY 1985. That year, NSF received nineteen proposals and funded five groups. In FY 1986, the Foundation received thirty-one proposals and again funded five new groups as well as one Materials Research Laboratory that had been down-graded. In FY 1987, thirty-two proposals were received, but only three new groups were funded, along with another down-graded Laboratory. Only one additional group will be funded in FY 1988, out of twenty-six that have sent in proposals. On an average, a Materials Research Group supports six investigators, and six to eight graduate and undergraduate students. The FY 1989 increase slated for the Materials Research Groups program will enable the Foundation to continue support for existing groups while funding three to four new additional groups.

Chemical, Biochemical, and Thermal Engineering Division

After Gramm-Rudman-Hollings sequestration occurred in FY 1986, the budget for the Chemical, Biochemical, and Thermal Engineering (CBTE) Division did not increase substantially: the FY 1987 budget maintained programs at the FY 1986 level. Because of the late action on the FY 1988 budget, CBTE programs again increased very little, leaving investigators working near FY 1986 levels of support. The impact of these funding patterns becomes more worrisome when one considers that 84 percent of federal support for basic research in chemical engineering conducted at universities and colleges comes from NSF.

Research initiatives within CBTE focus on areas important to our manufacturing technologies. The research supported impacts on biotechnology, electronic materials, pharmaceuticals, polymers, specialty chemicals, semiconductors, and ceramics. It is imperative that these funding levels be given priority in this and future NSF budgets.

ACS is pleased to see the Foundation's emphasis on combustion processes relating to the incineration of wastes. Novel concepts that will lead to advances in the thermal destruction of dangerous compounds are needed. Current research on uniform deposition of thin films for microelectronic chip production are being supported, as well, by CBTE. Research in this area can ultimately benefit our high-technology industries by eliminating the need for elaborate control systems, thereby reducing ultimate production costs.

Interdisciplinary Research

Chemistry is a central science that leads and supports research in numerous fields--from biotechnology to microelectronics. Chemistry's contribution to high-technology industries is wide-spread. A synergistic relationship exists among chemistry and other fields, notably with materials research, biology, physics, and engineering. These relationships are manifested in interdisciplinary efforts.

The Materials Chemistry Initiative, for example, is supported by the Chemistry; Materials Research; and Chemical, Biochemical, and Thermal Engineering Divisions, with a total combined funding of $19.6 million in FY 1989, a 24.8 percent increase. Included as part of this initiative is superconductivity research, materials with designed properties, and chemical processing of advanced materials and devices for information storage and handling.

The American Chemical Society commends the long-term support that the Materials Research Division provides in the field of superconductivity. Fourteen years of continuous support enabled Dr. Paul Chu's research team at the University of Houston to make the advances in superconductivity that made international headlines. However, much remains to be done. ACS supports the emphasis placed on superconductivity in FY 1989--a $2 million increase for that area to $14.5 million in the Materials Research Division. Overall, the Foundation will provide $20.1 million for superconductivity research, including $0.75 million in the Chemistry Division, $2.5 million in the Physics Division, and $2.2 million in the Engineering Directorate. Some funding will be part of the Materials Chemistry Initiative, supplemented with individual investigator grants.

Superconductivity has captured the imagination of the American people and it has demonstrated the need for long-term support of basic research. However, the Society is concerned that the small increment in the Chemistry Division will not be sufficient to permit in-depth studies on the characterization of superconducting materials. The Society hopes that this increment will increase substantially in FY 1990.

The ACS supports the additional research thrust within Materials Chemistry on "Chemical Processing of Advanced Materials and Devices for Information Storage and Handling." This initiative will be managed jointly with the Chemical, Biochemical, and Thermal Engineering Division, and possibly other divisions. Among the important research areas to be explored are the preparation and characterization of thin films used in making electronic, optical, and magnetic devices that store and handle information. Interfacial phenomena studies will help us understand the layering formations important to high-quality materials. Other studies will enable us to further our knowledge of available materials and to make more compact structures for information storage and handling.

The Society also notes the continued emphasis on another initiative, Chemistry of Life Processes, which was proposed in a 1985 National Academy of Sciences/National Research Council report, Opportunities in Chemistry. Research in Chemistry of Life Processes is conducted by the Chemistry Division in conjunction with the Biological, Behavioral, and Social Sciences Directorate. Areas supported include the chemistry of the senses and studies of large-molecule/small-molecule binding and recognition. The Chemistry Division supports additional single-investigator projects that complement these collaborative projects.

Benefits of Research and Future Research Directions

Opportunities in Chemistry emphasized five broad areas of research that require priority funding--understanding chemical reactivity, chemical catalysis, chemistry of life processes, chemistry around us, and chemical behavior in extreme conditions. Chemistry has been and continues to be underfunded to meet new research directions. Although the Society can cite discoveries, we can only wonder at the opportunities lost due to a lack of adequate funding.

Dr. Donald Sawyer at Texas A&M has discovered a new chemical method that destroys polychlorinated hydrocarbons, such as PCB's. The most environmentally persistent of these usually contain the most chlorine, yet Dr. Sawyer's new method would destroy these compounds more easily. His discovery has a broad impact on environmental chemistry.

Professor Donald Cram, UCLA, received the 1987 Nobel Prize in Chemistry for his research on "host-guest" chemistry. His research focuses on the ability of large molecules to recognize and capture small molecules. These large molecules mimic naturally-occurring substances called enzymes that influence chemical and physical reactivity. This landmark research, which will impact on technologies such as separations, catalysis, and molecular biology, would not have been possible without the thirty years of continuous support received from the Foundation's Chemistry Division, among others.

In June 1988, the National Research Council is scheduled to publish a report, similar to the 1985 Opportunities in Chemistry report, that will address the needs in the field of chemical engineering--"Frontiers in Chemical Engineering: Research Needs and Opportunities." This Report will identify areas of research that can provide the U.S. with a technological lead in the next decade and beyond. Areas of emphasis for NSF include:

- electronic, photonic, and recording materials;
- polymers, ceramics, and composite materials;
- separation and purification research;
- environmental protection, process safety, and hazardous waste management;
- surface and interfacial engineering;
- biotechnology and biomedicine;
- computer-assisted process and control engineering; and
- processing of energy natural resources.

Because of the large proportion of support provided for basic research in chemical engineering by NSF, the Foundation must play a leading role in the advancement of these research areas.

Recommendations for Research Divisions

Research support in the chemical sciences and engineering is central to our Nation's economic growth. The research performed is beneficial to our leading industries--pharmaceuticals; organic, inorganic, and specialty chemicals; resins; rubbers; fertilizers; and plastics. The Chemical and Allied Products sector has consistently maintained a positive trade balance with foreign nations. Last year, Chemical and Allied Products exported $9.3 billion more products than were imported.

These industries are research intensive. They rely not only upon the innovations made in our Nation's universities and colleges, but also upon educated scientists and engineers who can bring fresh insights and experiences to these industries. More than ever before, it is essential to maintain and improve the research base in the chemical sciences, and the Foundation must play the key role in this area.

The ACS is pleased that there are proposed increases for the Divisions of Chemistry; Materials Research; and Chemical, Biochemical, and Thermal Engineering. The Society is supportive of the new and continuing interdisciplinary research thrusts in these Divisions, as well as the cross-directorate human resource and education initiatives that are funded in the research divisions. These research initiatives and foundation-wide programs have a justified claim on increases proposed in the FY 1989 budget. However, after three years of budget constraints, the critical base research programs are underfunded and the individual researcher and established research groups are hard-pressed for current funding.

- ACS recommends that an additional $4.5 million be added to the budget for the Chemistry Division, to enable NSF to program additional funds to the core disciplinary research areas and instrumentation, which are underfunded.

- Considering the great research strides emanating from the Materials Research Division, ACS recommends that the Division receive an additional increase of at least $3 million above the FY 1989 request. The Society recognizes that additional monies would advance basic research in this area and strongly urges the Foundation to consider the importance of this field in its preparation of the FY 1990 budget.

- The research areas outlined in the soon-to-be-released National Research Council report present the Chemical, Biochemical, and Thermal Engineering Division with the opportunity to move into critical new avenues of study. To the extent possible, ACS recommends that funding be made available for these promising research areas, through internal readjustments within the confines of the proposed FY 1989 budget. Future budgets should be prepared with these needs in mind. In FY 1990, an increment of $12 million will be necessary to begin implementation.

Science and Technology Centers

The American Chemical Society believes that it is appropriate that a separate line item be created for the S&T Centers. The request of $150 million will provide support for twelve to fifteen centers in FY 1989 and assure continued funding for up to five years. To date, the National Science Foundation has received 325 proposals totaling $4.1 billion for the total five year period.

ACS commends NSF for the creation of the S&T Centers Coordinating Office, which will enable NSF to monitor the program carefully. Questions relating to the evaluation and lifetime of the centers must be addressed. The separation of the S&T Centers from the research divisions will enable NSF to measure the impact of the Centers on other modes of research funding, especially individual investigators and groups, a task in which NSF must be especially diligent.

ACS agrees with the finding of the National Science Board, the Foundation's advisory board, that the balance between centers and individual investigators should be determined by the requirements of the science and engineering enterprise. Although ACS firmly believes that the individual investigator is the appropriate mode of support in most fields of endeavor, the Society recognizes that the center concept may provide long-term support in some areas that demand additional funds. The centers concept may contribute to the number of investigators entering cross-disciplinary fields by encouraging students to complete doctoral studies in these emerging fields.

These centers may provide the incentive for creative interactions that can lead to scientific discovery. ACS supports the requested budget of $150 million; however, should budget constraints occur, funding for the S&T Centers should not come at the expense of the Foundation's requests for individual investigator research.

Science and Engineering Education Directorate

Given the continuing need for strengthening our national commitment to science and mathematics education, the Society is disappointed with the small increase in the Administration's FY 1989 request for the SEE Directorate. The proposed amount can not maintain the current momentum of Directorate programs, nor can it allow for the establishment of new programs vital to the success of NSF's congressionally chartered mission.

The well-documented crisis in U.S. science, engineering, and mathematics education is still with us. No one should assume that a few years of concern will compensate for many years of neglect. Nor should it be assumed that the problems now facing science, engineering, and mathematics education are in any way less serious than the problems of science and mathematics education in the mid-1980's. As stated in the 1988 report of the International Association for the Evaluation of Educational Achievement, the United States lags significantly behind many other countries in student achievement in the sciences for 5th, 9th, and 12th grades. In chemistry achievement, for example, the United States was ranked eleventh out of thirteen countries; 48 percent of U.S. high schools scored lower than the lowest schools in the highest ranking countries (England, Hong Kong, and Singapore). This situation is a shocking indictment of what was once the model school system, admired and emulated by the rest of the world.

If the U.S. does not solve its current educational problems and ensure that they do not recur, the Nation faces critical shortages of scientific manpower that will seriously impair economic productivity and destabilize its security well into the next century. Yet the level of support for SEE Directorate programs under the FY 1988 Current Plan is only one third of the level of support, in constant 1988 dollars, for education in the FY 1968 NSF budget--and there are 50 million more Americans to educate (See Attachment). As Congress itself has noted, the NSF education programs have been "short changed" for almost twenty years and there is an urgent need to "catch up".

In view of the Nation's precarious position, the American Chemical Society recommends that, for FY 1989, the SEE Directorate be authorized at a much higher level than the Administration request. An increase from FY 1988 to FY 1989 of at least $50 million is needed. Further, in concurrence with recommendations from two National Science Board reports, Educating Americans for the Twenty-First Century and Undergraduate Mathematics, Science, and Engineering Education (the "Neal" Report), the Society believes that the total effort of the SEE Directorate should rise to $600 million over the next four years, as part of the planned increase in the NSF budget.

The ACS heartily supports the efforts of the SEE Directorate to devise programs that address the full spectrum of science literacy concerns, as well as the more traditional science career programs. Science cannot flourish in a society where the majority of its citizens do not understand either the scope or the limitations of science as a solver of societal problems; and have neither the knowledge, nor the comfort level, necessary to address science and technology issues that impact upon the community.

The SEE Directorate's emphasis on materials development and informal science education at the elementary and middle school levels is very appropriate given the established importance of successful science experiences in the early years. Such experiences contribute to a greater appreciation of the nature of science, and to a larger available talent pool from which the scientists of the future will emerge.

However, programs planned for FY 1989 do not appear to be funded well enough to address the issues of teacher retraining and shortages. Given the aging population of current science and mathematics teachers, and the very few science and mathematics students electing to join the teaching profession, the ACS recommends that additional funds be made available to tackle these particular problems. To encourage entry into the profession, one approach would be to develop a Presidential Young Teacher's Award, analogous to the Presidential Young Investigator's Award, to support the training of undergraduates electing to become science and mathematics teachers. Such a program would do much to recognize that new, well-educated, highly motivated teachers are just as important to science as are new, well-educated, highly motivated researchers. The Presidential Awards for Excellence in Science and Mathematics Teaching recognize the contributions of current teachers but are not a sufficient motivator to attract new teachers into the profession.

The Society is pleased that the College Science Instrumentation Program is being administered for instructional as well as research purposes. The ACS reaffirms its previously stated position that this competition should be conducted each year, and that each year it should be open to two-year colleges, four-year colleges, and research universities. The need for this program is evident given the large number of unfunded proposals in FY 1988. All institutions of higher learning have need for undergraduate instrumentation. The proposed level funding for FY 1989 of $11.5 million is clearly inadequate. It should be noted that the Neal Report recommends an annual outlay of $30 million for instructional instrumentation and equipment.

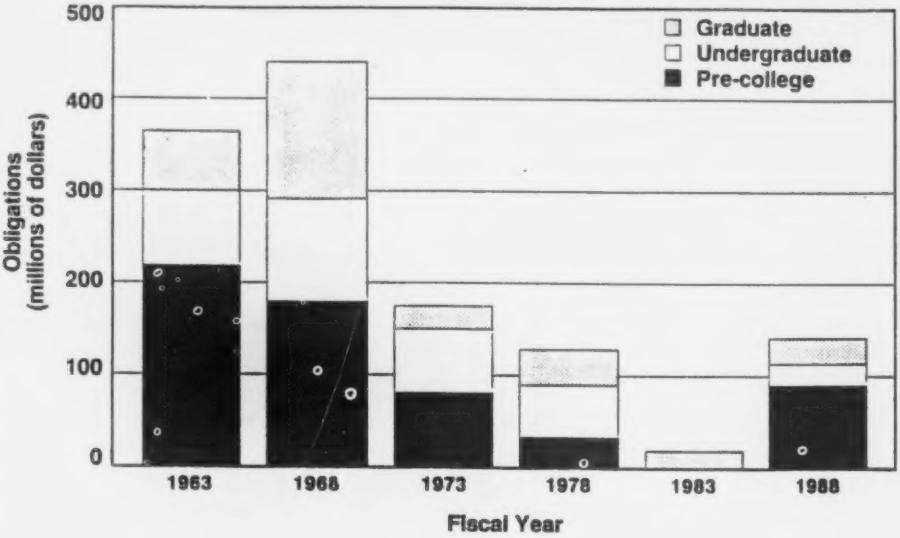
The American Chemical Society supports the expansion of undergraduate programs to more than $60 million in FY 1989. However, the Society notes that only $4.5 million in new money is assigned to the SEE Directorate for a total of $23.5 million in FY 1989. The Society again would like to cite the Neal Report which recommends a $100 million budget for undergraduate education in FY 1989 and designates the SEE Directorate as the lead organizational unit. The current coordinating function of the Office of Undergraduate Science, Engineering, and Mathematics Education does not meet the intent of that Report.

The ACS has learned that even with a decrease in proposed funding being planned, an additional 100 Graduate Fellowships will be awarded in 1989 through a change in accounting procedures. The Society notes that the SEE budget will have to increase in subsequent years just to meet these current obligations.

Finally, the Society fully supports the special emphasis of the Foundation on minority and female recruitment into the sciences. However, given the high exodus of minorities from the educational pipeline before 12th grade, and the disastrous pattern of mathematics and science coursetaking by minorities in high school, intervention should most effectively be targeted at the elementary and middle school levels. Support at the graduate, or even undergraduate, levels is well-meaning but probably too late to substantially increase the population of currently under-represented minorities in science, engineering, and mathematics. Because of demographic projections into the next century, increasing the representation of these minorities in the quantitative disciplines pool goes beyond equity issues to the very survival of the scientific enterprise as it is recognized today.

Science and Engineering Education

Obligations by Level of Education
(in constant FY88 dollars)



STATEMENT OF JAMES L. PAYNE, INDEPENDENT POLITICAL SCIENTIST, SANDPOINT, IDAHO

Senator D'AMATO. Mr. Payne.

Mr. PAYNE. Thank you, Senator. I am of a rather different position from the other members of this panel.

Senator D'AMATO. A political scientist?

Mr. PAYNE. Yes.

Senator D'AMATO. Do you want to make any political predictions for 1988?

Mr. PAYNE. No. [Laughter.]

Senator D'AMATO. I will give you two questions. All right? And you think about them. When you are done with your statement, we will hear from Dr. Colman; and then I want your answer.

Who will be the Vice Presidential candidate on the Republican ticket and the Democratic ticket?

Now, you go ahead with your statement, and then we will take Professor Colman; and then we are going to come back to you.

I want to give you ample opportunity; I don't want it to be said that I hurried you. [Laughter.]

NSF FUNDING OPPOSED

Mr. PAYNE. All right. As I said, I am of a different position from the other members of this panel. I am speaking against funding for the National Science Foundation.

Senator D'AMATO. My gosh; I don't know if I am going to ask you for your opinion. Well, I will ask, anyway; but go ahead. [Laughter.]

You are speaking against funding?

Mr. PAYNE. Yes.

Senator D'AMATO. What are you going to do with the money? I guess if you are against this funding, you should be in the Office of OMB. [Laughter.]

Mr. PAYNE. You might be surprised; there are a few witnesses appearing against spending.

Senator D'AMATO. You can have more than 4 minutes to tell me why you are against this. [Laughter.]

Mr. PAYNE. Let me just briefly make one argument. I have a longer statement for the record.

Senator D'AMATO. Your statement will be included in the record as if read in its entirety.

Mr. PAYNE. Thank you. We seem to be drifting into a pattern of steadily increasing the NSF budget, but no one is really asking whether this trend, indefinitely extended, is healthy. Do we really want to turn science in a full-scale government activity?

Congress and the administration are hoping to advance science with their appropriations. Unfortunately, a political authority cannot easily buy scientific achievement. Science is not a commodity like grain which can be bought in larger amounts by the expenditure of larger amounts of money. Scientific discovery is a subtle, creative process involving an intricate balance among the elements of imagination, self-discipline, personal conviction, and social need.

When the government tries to nurture this process by a permanent system of subsidies, it winds up impeding science in several ways. First, it reinforces the prevailing authority systems. Political officials are not good at detecting scientific genius in the raw, but they do respond to titles and status symbols.

As a result, government funds for science are placed in the hands of the prominent and powerful scientists, the political leaders of science.

Unfortunately, scientific innovations rarely come from this group. As the history of science repeatedly shows, the originators of scientific breakthroughs are typically obscure mavericks; and the usual pattern is for the establishment scientists to reject the innovator.

The history of science shows that even unsubsidized scientific establishments pose a great obstacle to scientific progress. Government funding further strengthens official science in its ability to exclude or repress innovators—innovators who can advance science further than an array of respectable grant recipients.

UNDERMINING OF INTELLECTUAL INTEGRITY

A second problem with government funding of science is that it undermines healthy attitudes in the scientific disciplines. Scientists need to be independent minded, forcefully defending what they believe to be the truth, no matter how unfashionable it may be.

Political and bureaucratic funding systems work against this habit of intellectual integrity. They penalize outspokenness and originality, and reward conformity.

One cannot say how much damage NSF funding has done to the scientific community through its reinforcement of authority groups and the encouragement it gives to the bureaucratic mentality in science. Perhaps the injury is yet slight, but I shudder to think what the effect of more billions of support might be in future years. Thank you.

Senator D'AMATO. That is interesting. I wasn't going to ask any questions, but I am going to have everybody respond to your ideas.

Let me say this for the record. I think we should certainly meet the budgets, and this is a hearing; but I have to say that I am not going to suggest, as some do, that the establishment is taking over. It is probably appropriate in much more than just the scientific field and the NSF. That is always a problem, isn't it?

The institutional mentality, whether it be in banking, whether it be even in politics—the institutional mentality by the insiders is to keep everybody out. And I know political organizations in my state and in my party, and it seems to me they would rather keep people out than bring people in. They have to be the lords and masters of it all. That is an ongoing problem.

Mr. PAYNE. You are absolutely correct.

Senator D'AMATO. It is not as novel as one would think.

Mr. PAYNE. That is why we are for a pluralistic society with many centers of power in this society, and that is why a single governmental entity destroys all that independence and flexibility we need.

Senator D'AMATO. We will hear from Professor Colman; but don't forget, I would like to hear your predictions after that.

[The statement follows:]

STATEMENT OF JAMES L. PAYNE, INDEPENDENT POLITICAL SCIENTIST, SANDPOINT, IDAHO

(Dr. Payne is an independent political scientist who resides at 335 Lavina Ave., Sandpoint, Idaho 83864)

Thank you for allowing me to appear to discuss some aspects of federal funding for the National Science Foundation. As you know, the NSF is seeking expansion of its budget. I am appearing here to argue against this request. Increased NSF appropriations would be harmful both to the country and to the scientific community.

I realize that this view is not one commonly heard in this forum. The normal pattern in this committee, and in other committees of Congress, is for hearings to be dominated by the advocates of government programs. For example, on the subject of NSF funding this committee heard from 25 people last year, including federal administrators and representatives of universities and other organizations. Every single one supported the National Science Foundation and its programs. Not one witness appeared to make the case against NSF funding.

This imbalance undermines sound decision-making. Congress cannot make an informed decision on the worth of government programs if it hears only from those who support these programs. Opponents of programs need to appear as well. That is why I am here, as one voice making the case against program growth. A ratio of 1 to 25 is not yet a fair balance, but it's better than a total default.

* * *

We seem to be drifting into a pattern of steadily increasing the NSF budget, but no one is asking whether this trend, indefinitely extended, is healthy. Do we really want to turn science into a full-scale government activity? The question merits careful thought.

Congress and the administration are hoping to advance science with their appropriations. Unfortunately, a political authority cannot easily buy scientific achievement. Science is not a commodity like grain which can be bought in larger amounts by the expenditure of larger amounts of money. Nor is it a simple task like delivering the mails, or damming up rivers. Scientific discovery is a subtle, creative process involving an intricate balance among the elements of imagination, self-discipline, personal conviction, and social need.

When the government tries to nurture this process by a permanent system of subsidies, it winds up impeding science in several ways. First, it reinforces the prevailing authority systems. Political officials are not good at detecting scientific genius in the raw, but they do respond to titles and status symbols. As a result, government funds for science are placed in the hands of the prominent and powerful scientists, the political leaders of science.

Unfortunately, scientific innovations rarely come from this group. As the history of science repeatedly shows, the originators of scientific breakthroughs are typically obscure "mavericks," and the usual pattern is for the establishment scientists to reject the innovator. [1] These "gatekeepers" limit the opportunities of a scholar who threatens to overturn "normal," accepted science. They exclude him by applying certification tests (calling him an "amateur"), or by denying publication space, or by imposing apprenticeship requirements. As the British anthropologist Francis Galton put it, "a new science cannot depend on a welcome from the followers of the older ones."[2]

One of the more recent cases of official science unfairly rejecting an innovator was the reaction of the American geology establishment against

Alfred Wegener and his theory of continental drift. The hostility of the "big guns" of the field against the theory in the 1920s meant that by 1930 "proponents of continental drift were dismissed contemptuously as cranks."[3] It was decades before the idea was resurrected--and now it is a central point of modern geological theory.

The history of science shows that even unsubsidized scientific establishments pose a great obstacle to scientific progress. Government funding further strengthens official science in its ability to exclude or repress innovators--innovators who can advance science further than an army of "respectable" grant recipients.

The picture should not be exaggerated, of course. Many leaders of the American science establishment are fair-minded men and women who recognize the importance of creativity. Nevertheless, there will always be limits to the freedom that mainstream scientists can extend to revolutionaries who threaten established assumptions and established careers.

A second problem with government funding of science is that it undermines healthy attitudes in the scientific disciplines. Scientists need to be independent-minded, forcefully defending what they believe to be the truth no matter how unfashionable it may be. Political and bureaucratic funding systems work against this habit of intellectual integrity. They penalize outspokenness and originality, and reward conformity.[4]

One can't say how much damage NSF funding has done to the scientific community through its reinforcement of authority groups and the encouragement it gives to the bureaucratic mentality in science. Perhaps the injury is yet slight. But I shudder to think what the effect of more billions of "support" might be in future years.

The Burden on the Independent Scientist

My second argument against government funding of science is that it is inefficient.

Because witnesses supporting government programs dominate the congressional scene, there is a tendency for legislators to suppose that government does everything. On science in particular, you hear exclusively from federal science officials and from those advocating federal science programs. This gives the impression that government is responsible for science, that government funding is critical to the "survival" of science.

This view overlooks the strength and versatility of the many private sources of science funding: businesses and corporations; wealthy individuals and foundations; mass membership voluntary associations for the support of scientific work; private schools, colleges, universities, laboratories, hospitals, and institutes.

In addition to these, another private source deserves attention: personal funding, that is, support put forward by the scientist himself, his family and close friends. Historically, this has been the major source of science funding. Scientists who believed in what they were doing dug into their own pockets to fund their research. For example, when Isaac Newton wanted a laboratory, he went to London and purchased two furnaces and a supply of chemicals from his personal funds.[5] The publication of his historic Principia was made possible by his friend and colleague, Edmond Halley (the astronomer), who financed its printing.[6] Benjamin Franklin is another famous case of a self-supporting scientist: he purchased apparatus for electrical experiments with money he saved from his printing business.[7]

This great tradition of individually-supported scientific exploration continues today. Self-supporting scientists range from members of engineering consulting firms to backyard inventors, from amateur astronomers and retired university scholars to free lance wildlife photographers. Independent scientists have given us much of what makes our modern world, from Xerography to the Polaroid camera, from Insulin to Streptomycin.[8] The personal computer industry is another example. Neither government nor big business had anything to do with it. It was developed by independent (and often self-taught) engineers and programmers who started out in their garages.[9] The distribution of patents also shows the importance of small-scale activities: 25 per cent of all patents go to individuals, and another 35 per cent go to small firms.[10]

One of the many strengths of private, self-funding in science is its great efficiency: when you pay for equipment and supplies yourself, you think carefully about how to do something the cheapest way, and you don't buy equipment you can do without. This contrasts dramatically with government funding where equipment, being "free" to the scientist, can be wasted with shocking unconcern.[11]

Another efficiency in self-funding is that it ties convictions to funding. The scientist spends money only if he believes that the project is worth the expenditure. His friends will help only they feel there is promise in the proposal. Edmond Halley financed Newton's masterpiece because he was convinced of its merit.

This test of individual commitment is lacking in governmental funding of science as we practice it today. When government pays the tab, the scientist typically does not have to make any sacrifice to conduct his project. To the contrary, government funding is often the way to live well and to add extra amenities to the workplace. As a result, weak projects can be put forward by scientists who have little conviction of their worth--obviously a cause of enormous waste.[12]

Personally-financed research is an efficient method of funding scientific activity, and one that society should encourage. Unfortunately, as our policies work out, we are doing the opposite. Although it may not be realized at first, the biggest enemy of the self-supporting scientist today is taxation. Taxation--both in the form of income taxes and indirect taxes--drains away from each independent scientist thousands of dollars, dollars he needs to expand his facilities, to buy new equipment, to repair broken equipment, to travel, to make telephone calls, and so on. In truth, through its burden of taxation, the federal government has made itself the enemy of the independent scientist. No one has desired that it be so, but that is how it turns out.

What does the government do with the funds it takes from independent scientists? We are discussing one of the uses here today: it gives this tax money to state-approved scientists through its system of grants and subsidies. Thus we are transferring resources from a highly efficient system for supporting science (self-financing) to a much less efficient one (government subsidy). Again, we see how NSF funding hurts science more than it helps it.

Quite apart from the question of social efficiency, there is the matter of fairness. Many of the self-supporting scientists who are being taxed to pay for NSF grants are less wealthy than the scientists who receive the grants. Indeed, I would guess that in a typical case, the NSF beneficiary gets a salary perhaps two or three times that of the self-financed scientist. The disparity in equipment and facilities would be at least as great.

Is this type of perverse income transfer justified? Does the well-financed NSF scientist have the right to tap the scrimping independent for more income and more lavishly equipped facilities?

The question answers itself, it seems, and to my mind is a further reason why government funding of scientific research is unsound.

Notes

1. Thomas S. Kuhn, The Structure of Scientific Revolutions (Chicago, University of Chicago Press, 1962), pp. 149-151; Bernard Barber, "Resistance by Scientists to Scientific Discovery, " Science, Vol. 134 (1961), pp. 596-602; John Krige, Science, Revolution and Discontinuity (Atlantic Highlands, NJ, Humanities Press, 1980).

2. Quoted in Barber, p. 599.

3. A. Hallam, "Alfred Wegener and the Hypothesis of Continental Drift," in Scientific American, Continents Adrift and Continents Aground (San Francisco, W. H. Freeman, 1976), p. 8; Walter Sullivan, Continents in Motion The New Earth Debate (New York, McGraw-Hill, 1974), p. 11.

4. Concern on this point has been expressed by Derek J. De Solla Price, Little Science, Big Science (New York, Columbia University Press, 1963), pp. 107-113. See also Norman W. Storer, The Social System of Science (New York, Holt, Rinehart and Winston, 1966), p. 143.

5. Gale E. Christianson, In the Presence of the Creator Issac Newton and His Times (New York, The Free Press, 1984), pp. 128, 212.

6. Christianson, p. 300.

7. Carl Van Doren, ed., Benjamin Franklin's Autobiographical Writings (New York, Viking Press, 1945), p. 723.

8. U. S. Department of Commerce, Technological Innovation: Its Environment and Management (Washington, Superintendent of Documents, 1967), pp. 17-18; Lawrence Cranberg, "The Physicist as Consultant-Entrepreneur," Physics Today, June 1978, p. 9.

9. David H. Ahl, "The First Decade of Personal Computing," Creative Computing Vol. 10, No. 11 (November 1984), pp. 30 ff.

10. J. Herbert Hollomon, "The U. S. Patent System," Scientific American Vol. 216, No. 6 (June 1967), p. 21.

11. Speaking of the problems of government-supported science, one observer noted this issue of waste: "At times, costly equipment is purchased not because there is a scientific purpose to which it is to be applied, but because money, usually federal money, is available." He cited an example of two federally-funded electron microscopes that were gathering dust, uncrated, in a basement. The scientist involved in the purchase explained: "We have no use for them at present but we had the money and we figured we might as well get them." Daniel S. Greenberg, The Politics of Pure Science (New York, World Publishing, 1967), pp. 289-290.

At Harvard, the abuse and diversion of NIH funds resulted in the University being forced to make a payback of some $10 million. Not surprisingly, the medical research establishment came down hard on the scientist who exposed the fraud, Dr. Phin Cohen. This researcher of 18 years standing was fired from his post at the Harvard School of Public Health. It seems almost inescapable that a similar pattern of abuse--and repression of possible whistleblowers--characterizes much of NSF funding. See Committee on Appropriations, United States Senate, Department of Housing and Urban Development, and Certain Independent Agencies Appropriations for Fiscal Year 1986, Part 3, pp. 1911-1934.

12. Greenberg (p. 290) notes this problem: ". . . it is now possible to function and thrive in scientific research without the sense of inspiration and commitment that characterized the community in its penurious days. Science was once a calling; today it is still a calling for many, but for many others, it is simply a living, and an especially comfortable one. . . ." See also De Solla Price, p. 113; Storer, p. 141.

STATEMENT OF ROBERTA COLMAN, PROFESSOR OF BIOCHEMISTRY, UNIVERSITY OF DELAWARE, ON BEHALF OF THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY

Professor COLMAN. I would like to give my statement, but then I would like to respond to Mr. Payne.

Senator D'AMATO. I have to tell you something. I don't know how Mr. Payne got here, but it is good we have him here. We can use a good optimist, you know. [Laughter.]

Professor COLMAN. Thank you for the opportunity to testify again on behalf of the fiscal year 1989 budget for the National Science Foundation. I am Roberta Colman, professor of biochemistry at the University of Delaware. I represent the Federation of American Societies for Experimental Biology [FASEB], a nonprofit organization whose purpose is to develop and disseminate new knowledge in the life sciences through its meetings and publications.

FASEB's more than 21,000 members carry out research in universities, government, and industry throughout the United States. We are pleased to see that the administration is continuing its efforts to double the NSF budget in 5 years and hope that this year Congress will be supportive of that goal.

However, we also wish to note that doubling the NSF budget at the expense of other federal basic research programs, such as those of the National Institutes of Health, would not be beneficial.

BIOLOGICAL AND BEHAVIORAL SCIENCES DIRECTORATE

The Biological and Behavioral Sciences Directorate is of greatest concern to us. Under the current administration proposal, the entire BBS Directorate budget would be $289 million, an increase of 8.6 percent. However, this total is considerably less than that requested by the administration last year for BBS.

The actual funding that Congress provided last year for two important divisions within BBS—Molecular Biosciences and Cellular Biosciences—was increased by less than 1 percent. In such an important and groundbreaking area of scientific research as modern biology, with biotechnology holding so much promise, this inadequate level of funding should be adjusted upward.

We support the fiscal year 1989 request, although we would prefer that the BBS Directorate be funded at the fiscal year 1988 level—the request level—of $297 million.

FASEB considers that the 5.2-percent increase proposed for the Chemistry Division of the Directorate for Mathematical and Physical Sciences is inadequate. A larger increase here, perhaps on the order of the 10.4-percent increase proposed for the Chemical, Biochemical, and Thermal Engineering Division, would be well worth the investment.

We are concerned about the administration's budget proposal for the Science and Technology Centers program. The administration proposes to spend $150 million to fully fund for 4 to 5 years about 15 of the center proposals that NSF received last year.

While this is a time when resources are scarce, and NSF has recently undertaken other exciting center initiatives in plant sciences and supercomputing, we believe it should move slowly on the Science and Technology Centers Program. Only a few centers, perhaps one to two, should be funded until there is an opportunity to evaluate their effectiveness.

We are also deeply interested in science education and, therefore, FASEB supports the $156 million requested for the Science and Engineering Education Directorate and finds commendable the emphasis this directorate gives to precollege education.

However, the S&E Directorate ought to make more use of the scientific expertise when it comes to the teaching of science. FASEB and other scientific societies should be consulted, along with education professionals in SEE programs, to develop new approaches to science instruction.

We applaud NSF's plans to spend $49 million this year on increasing minorities' representation in science; and given the significance of the problem, this amount can surely be well utilized. However, we consider the programs in this area should be administered by the SEE Directorate, rather than by research directorates; and the large portion of these funds should be spent where they can do the most good, namely at the precollege level. We are also pleased that NSF recognizes that women in science have special problems, particularly at a post-graduate level.

The NSF programs, such as those for research initiation grants and career advancement awards address this issue, and FASEB supports these efforts.

Finally, we endorse a peer-reviewed academic research facilities construction and renovation program managed by NSF. Such a program was proposed in H.R. 1905, a bill introduced last year by Representative Robert Roe. We are pleased that NSF was recently authorized to spend $85 million for academic research facilities in 1989.

We realize that you are faced with competing demands for a limited amount of money. Nevertheless, FASEB considers that support for scientific research and education, as represented in the NSF budget, deserves very high priority because of their importance to our nation's continued development and economic health.

[The statement follows:]

STATEMENT OF ROBERTA COLMAN, PROFESSOR OF BIOCHEMISTRY, UNIVERSITY OF DELAWARE, ON BEHALF OF THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY

SUMMARY AND RECOMMENDATIONS

- FASEB strongly supports the broad outlines of the administration's $2.05 billion fiscal year 1989 budget proposal for the National Science Foundation.

- FASEB also continues to support the administration's plan to double the NSF budget over the next five years, provided that this goal is not accomplished at the expense of other federal basic research programs, such as that carried out by the National Institutes of Health.

- FASEB strongly supports funding the Biology Divisions of the Biological and Behavioral Sciences Directorate at least at the level of the administration's request but urges that more money be appropriated for these programs. This is necessary to make up for the ground lost last year when the Directorate's increase did not keep pace with the rate of inflation.

- FASEB recommends that the Chemistry Division (Mathematical and Physical Sciences Directorate) be given more than the 5.2 percent increase proposed by the administration. The Federation supports the 10.4 percent increase requested for the Chemical, Biochemical and Thermal Engineering Division (Engineering Directorate).

- FASEB believes that NSF should proceed at a more deliberate pace with the Science and Technology Centers program. NSF may need time to work with and evaluate a few S & T Centers.

- FASEB supports the $156 million requested for the Science and Engineering Education Directorate and recommends that this be approved. The Federation applauds the emphasis this Directorate gives to precollege education and finds the 17.5 percent increase proposed for the Teacher Preparation and Enhancement Division's budget to be particularly commendable.

- FASEB and other scientific societies have shown specific interest in the teaching of science and believe the expertise of such organizations in this field should be enlisted in the battle to improve science education.

- FASEB notes NSF's request for funds to deal with the special problems faced by minorities that are currently under-represented in science. The level proposed constitutes a good start. However, we believe that these programs should be administered by the SEE Directorate and should be focused on precollege students.

- FASEB is pleased that NSF acknowledges that women in science have special problems and needs, and FASEB supports NSF's efforts in this area.

- Finally, FASEB supports an academic research facilities construction and renovation program managed by NSF, such as the program proposed in HR 1905, the bill introduced in the House of Representatives last year by Rep. Robert Roe (D-NJ).

Overview. Mr. Chairman, members of the subcommittee, thank you for this opportunity to testify on behalf of the FY 1989 budget for the National Science Foundation. I am Roberta Colman, professor of biochemistry at the University of Delaware in Newark. I represent the Federation of American Societies for Experimental Biology (FASEB), a nonprofit organization whose purpose is to develop and disseminate new knowledge in the life sciences through its meetings, publications, and programs. FASEB's more than 29,000 members represent research centers in universities, government, and industry throughout the U.S. We have had 110 Nobel Laureates named from among our membership since FASEB was founded in 1912.

In general, we strongly support the budget proposal. There has been no real growth in disciplinary programs for three years now, and last year the NSF budget did not, in the aggregate, even keep up with inflation. Real growth in the disciplinary research programs is needed, and we urge that Congress address this need when it appropriates funds for NSF this year.

We are pleased to see that the administration is continuing its efforts to double the NSF budget in five years, and we hope Congress will be supportive of that goal this year. However, we also wish to note, as we did last year, that doubling the NSF budget at the expense of other federal basic research programs, such as those at the National Institutes of Health, should be avoided.

Research Programs. Mr. Chairman, we know you are operating under tight fiscal constraints. Nevertheless, we respectfully point out that in the long run, scientific research makes a vital and undeniable contribution to the economic health and well-being of the United States. Therefore, support for basic scientific research deserves to be a very high priority. There certainly is ample evidence that the payback from scientific research is many times the initial investment.

NSF Director Erich Bloch underlined the importance of basic research to long term productivity in his statement on this budget proposal: "We still need to stimulate growth in productivity to improve our competititve posture with respect to the rest of the world. We still need to strengthen the links between research and education; between universities, industries, and government; and between basic research and new technologies and products. Revitalization of the research and education base at the Nation's colleges and universities remains the key to accomplishing this task."

For obvious reasons, the Biological and Behavioral Sciences Directorate is of greatest concern to us. Under the administration proposal, the entire BBS Directorate budget would increase about $23 million, from $266 million to $289 million, an increase of 8.6 percent. However, we should point out that this total is still $8 million less than what the administration requested last year for BBS.

In FY 1988, the administration requested $297 million for BBS. Full funding at the administration's current request level would at least be an improvement over the increase that Congress provided BBS last year -- a scant 3 percent -- and we support the FY 1989 request. Two important biology divisions within BBS did not do even that well: Funding for Molecular Biosciences and Cellular Biosciences was increased by less than 1 percent. In such an important and ground-breaking area of scientific research as modern biology, with biotechnology holding so much promise, this inadequate level of funding should be adjusted upward. In short, we support the FY 1989 request, although we would prefer that the BBS Directorate be funded at the FY 1988 request level of $297 million.

With regard to another research program of special concern to the life sciences, the 5.2 percent increase proposed for the Chemistry Division of the Directorate for Mathematical and Physical Sciences is inadequate. A larger increase here -- perhaps something on the order of the 10.4 percent increase proposed for the Chemical, Biochemical, and Thermal Engineering Division of the Engineering Directorate -- would be well worth the investment.

Science and Technology Centers. We are concerned about the administration's budget proposal for the Science and Technology Centers program. The administration proposes to spend $150 million to fully fund for five years about a dozen of the centers proposals NSF received last year. We believe that at a time when resources are scarce and NSF has recently undertaken other exciting centers initiatives in plant sciences and supercomputing, NSF should move slowly on the Science and Technology Centers until it has had the opportunity to fund and evaluate a few centers.

Science Education. While basic science funding is of continued concern to FASEB and its members, we are also deeply concerned about science education because of its importance to the future of scientific endeavors in this country.

As we discussed in our testimony before this subcommittee last year, study after study has indicated that young people must be attracted to scientific careers early in the educational process. Specifically, their interest must be sparked while they are still in elementary or secondary school. Furthermore, studies by NSF and the Department of Education, among others, indicate that teachers are an important influence on young people's career choices. The conclusion is inescapable that good science teachers during the precollege years are probably the single most important element in efforts to attract more young people to careers in science. Looking at the budget request for the Science and Engineering Education Directorate, it would seem that NSF has taken this message to heart.

We are pleased that NSF plans to spend $109 million of the $156 million requested in FY 1989 for the SEE Directorate on precollege programs. This $109 million is more than two-thirds of the SEE Directorate's budget, and we believe that this emphasis is rightly placed on precollege education. We are glad to note that the Division of Teacher Preparation and Enhancement within SEE would be increased by $8 million, from $45.5 million to $53.5 million, an increase of 17.5 percent. We applaud this focus and hope to see it continued.

We do suggest that the SEE Directorate ought to make more use of scientific expertise when it comes to the teaching of science. Scientists who are highly knowledgeable about the latest, cutting edge research may also have valuable insights about how scientific material ought to be taught. FASEB and other scientific societies that have shown specific interest in the teaching of science should be consulted along with education professionals in SEE programs to develop new approaches to science instruction.

Under-represented minorities. While our nation's young people do not choose careers in science and mathematics nearly as often as we would like, we need to be especially concerned about students who are members of minority groups that are already under-represented among the ranks of scientific researchers.

There are a variety of reasons why black, Hispanic, and native American students so rarely choose science as a career, even when they are highly qualified to do so. NSF addresses this problem explicitly in its budget proposal. By its own reckoning, NSF plans to spend $49 million this year on increasing minorities' representation in science, and, given the significance of the problem, this amount can surely be well utilized. However, we wish to repeat the recommendation we made last year: Programs in this area should be administered by the SEE Directorate, rather than by the research directorates, and a large portion of these funds should be spent where they can do the most good, namely at the precollege level.

We are also pleased that women's concerns are addressed in the NSF budget request. We would like to submit for the record an article that appeared in the February, 1988 *FASEB Journal*, dealing with the special problems women face in scientific careers, and ask that it be included in the record. While the numbers of women entering science has improved significantly since the early 1970s, more recently the numbers have leveled off and appear to be on the decline. We believe this trend should be reversed. NSF's programs aimed at women may help accomplish this goal. We would be happy to provide you with more information on this issue.

Facilities. We would support the establishment of a new facilities construction and renovation program at NSF, such as a program along the lines suggested in HR 1905, the facilities construction bill introduced last year by Rep. Robert Roe (D-NJ), chairman of the House Committee on Science, Space and Technology. Research facilities need to be updated, and yet government programs to help universities meet those needs are minimal.

The overwhelming task of meeting facilities needs has forced many colleges and universities to use political channels to obtain funding, directly from Congress. This bypasses traditional peer review procedures, which are designed to assess the merits of competing proposals and provide support for those which meet programmatic objectives and are the most deserving. But it does little good to wring our hands over this political solution when no real alternative exists. A peer-reviewed facilities program through NSF would be a constructive solution to the problem of aging or inadequate facilities. This would be an incentive to the generation of high quality science, and a valuable long-term contribution to our nation's scientific enterprise.

Summation. Mr. Chairman, we realize that you are faced with competing demands for a limited amount of money. This always seems to be the case. Nevertheless, I wish to reiterate FASEB's view that scientific research, science education, and the infrastructure needed to accomplish these objectives, deserve priority consideration because of their importance to our nation's security and economic health.

While we have recommended a few changes today in the NSF budget request, the request on the whole is a good one, and we urge you and your colleagues to support it.

I would be pleased to answer any questions you may have.

Professor COLMAN. May I comment on the previous testimony?

Senator D'AMATO. No, no. You could go on for a long time about that. I want to know about Mr. Payne's suggestion that the "old boy" network is protecting itself, and I am sure many of us have that concern. Many of the networks protect themselves—those of us in the political institution, those of us in private life, and whatever companies.

Go ahead.

PEER REVIEW SYSTEM

Professor COLMAN. It is my opinion that the peer review system as run by NSF and other of the scientific organizations like NIH is really quite good, and that what we get are objective, critical reviews.

And when this is carried out by multiple reviewers, I think that this is the best method for selecting creative new research; and I think it has worked very well.

Senator D'AMATO. What about the comment that the "haves" continue to get and the "have-nots" were never in the system; and if you look at the distribution of the dollars, I don't know, but maybe a rather inordinate percentage goes to a select few if you look at the university system. I have been known to bring that up.

Professor COLMAN. I don't think that is actually true in terms of individual investigators. It has been my experience that new investigators are looked at objectively. If anything, new ideas and young investigators are our favorites.

Senator D'AMATO. Fine. I agree with you, but we do need to work to broaden the base. West Virginia, where I am from, is a state, as you know, that is trying to find its sea legs to be more competitive. But I do believe the system as we have it is better than anything that anyone else has recommended.

Dr. JONES. I agree.

Mr. TOMPKINS. I happened to have worked at one time or another in industry, government, and academia. There is an "old boy" network, but I think the NSF has functioned quite well in spite of that.

Senator D'AMATO. I was skipping Mr. Payne because of his testimony; but we had one witness who said that, maybe by giving dollars out in this way, we just perpetuated a system as opposing to challenging and bringing in new and innovative and creative ideas and individuals. This has been a good panel.

Mr. MCCURDY. I think there is more concern about how decisions are made in NSF, that is, within the government, than if we were to go to some other form of funding. If I lacked confidence in how it is done in NSF, I think I would lack even greater confidence in how foundations make these decisions and the corporate world makes these decisions.

At least here is a system in which you can have input and we can have input.

Senator D'AMATO. Mr. Payne, you have 1 minute to reply.

Mr. PAYNE. Can I make a comment about something that all of the witnesses are saying? They are pointing to the achievements and benefits of the program and I agree there are achievements and benefits.

What is unfortunate in all of these testimonies is they don't take into account what the economists would call the opportunity cost, that is, the dollar that is being spent is not floating out of the sky to do something good. It was taken away from someone else who was going to do something good with it.

Senator D'AMATO. You see, that is where you run into trouble. The trouble is that we have so many turkey programs and this is probably one of the best. Consequently, as I said, you and Miller would make a great team; you would cut everything.

GOVERNMENT VERSUS PRIVATE FUNDS

Mr. PAYNE. I believe that the correct way to analyze the use of government funds is to match them against the use of private or voluntary funds because that is where the funds are ultimately coming from.

In this particular case, the funds should be lined up against the private use of scientific funds, for example, the funds that an individual scientist might take from his own income to pursue his own research.

Senator D'AMATO. Hopefully, we can do that, but people have various capabilities and various needs. Let me ask you this now that you have had the opportunity to think about this. One of the great political scientists in the practical sense—she is a practitioner of it——

Senator MIKULSKI. You mean I engineer my own elections. [Laughter.]

Senator D'AMATO. Now, would you predict for us who you envision as the two Vice Presidential candidates, for both parties?

Mr. PAYNE. I think the answer to both questions is Senator Alfonse D'Amato. [Laughter.]

Senator D'AMATO. Aren't you going to hazard a guess?

Mr. PAYNE. No; I am sorry. I don't engage in that kind of thing.

Senator D'AMATO. All right; I thought we could get a prediction.

Mr. PAYNE. No; I have enough people mad at me for other reasons.

Senator D'AMATO. I do thank the panel.

Mr. TOMPKINS. Senator, I am also a political scientist. I will hazard a guess for you.

Senator D'AMATO. Oh, good.

Mr. TOMPKINS. Dukakis and Nunn, and Bush and Dekmejian; and it will be such an exciting election that voting turnout will be 22 percent. [Laughter.]

Senator MIKULSKI. Could I ask the panel one question before the go, after such a lively exchange? As you can see, we have HUD and Independent Agencies, and my concern is that we are not getting a dollar's worth of value for a dollar's worth of research that we are putting into it.

BUDGET REORGANIZATION

And when I find that science policy is individually focused rather than individual agency focused, rather than looking at the broad view of what science objectives our country has over a period of time, that takes me to the question that if any of you would reorganize the way we do our budget, would you recommend that we have a science budget in which we would then take a look at all of the funding we need to do from NASA on up.

Now, if we are talking about our civilian budget, where we need the ideas and we also think of how that relates to new fields like biotech. The National Institutes of Health was mentioned as part of the science budget and has now sought the National Science Foundation, which then would go to where are we going in scientific research, as well as the development of our scientists as we face these demographic shortages.

So, I wonder how you feel about that?

Mr. TOMPKINS. I am Curt Tompkins with the American Association of Engineering Societies. I am also chairman-elect of the Engineering Deans Council, representing all 275 engineering deans in the country.

We would really support that; even though we haven't taken an official position, I can guarantee you that would make a lot of sense. It really bothers a lot of us in the engineering education community that you do have the things mixed under this particular structure. It would just be great if you could separate them out and focus on the investment in the future of this country.

Professor COLMAN. I would like to support the opposite view. I think that if we have multiple agencies to go to, there is a greater tendency to have smaller individual grants and smaller programs, rather than have everything in a large, all encompassing view. And I think that small science gives more creative ideas.

SCIENCE BUDGET

Senator MIKULSKI. I am not talking about abolishing the agencies. I am talking about having a science budget, the way we have a capital improvement budget, for example, a municipal and state government and so on.

Professor Colman. I think it depends on how it is actually administered and how the money is distributed.

Senator Mikulski. Madam, that is what it would go to—how the money is distributed. Right now, I sense a real duplication, which goes to some of the things you are talking about. Anyway, I am just advocating this as an idea.

Do any of the other panelists want to comment before we wrap up?

Mr. McCurdy. I would just say that it is an interesting idea, but there is nothing automatic about that kind of change. In other words, you could have a kind of supergroup that was put in place, another set of mechanisms. I would be very careful to oversee what those mechanisms were.

Senator Mikulski. I don't know what you just said. I don't understand that.

Mr. McCurdy. What I am saying is that there is nothing automatic in achieving some kind of coordination among the various agencies by requiring a science budget.

Mr. Payne. I think there may be a philosophical issue here, too, of whether we want a single director of national science policy. I think the argument I would make is that science is so fluid and the potential is so difficult to see that we don't want to set up any political authority over this enterprise.

Professor Colman. May I make one other comment about duplication? I think that in any grant application to any of the agencies where these grants are reviewed, there is a requirement that all other funding be put down and evaluated. And I think that any reviewer would consider whether or not there is duplication by any other agency and request that information.

So, I think that there is already in place a mechanism to avoid duplication.

Dr. Jones. I am not sure some of us understood your point. I heard you to say you would separate out the NASA, NSF, and science related things from the HUD and other independent agencies and focus, whereas now you have a very heterogeneous mix. Would you make sure I understand what you are asking?

Senator Mikulski. First of all, the NASA budget reform is being discussed, one of which is to go to a 2-year budget, for example, so that we would have greater opportunity for oversight and analysis.

One of the ideas that I just had—and I am not saying it is even a good one, and that is why I am throwing it out for discussion—is that we would identify every agency involved in civilian-based research, and the possibility then of placing that under one budget function as a science budget function.

Therefore, we would have staff capacity to evaluate that, to see how it interacts with established national goals. We have to think about our future and so we are just not marching around from one activity to another, and not reacting to the activities of foreign nations. Up goes a sputnik—we go off and do something.

And it goes even to developing our laboratory capacity; it goes to a lot of things. So, that is what we are discussing.

Senator D'Amato. Senator, would you be able to take over the hearing at this point?

Senator Mikulski [presiding]. Yes; I will.

I think the panel has sufficiently commented on that. Right now, the idea is being floated. But we do know that we have to face up to our deficit. Then, the question becomes: How do we get the wisest use of the dollar? And then, how can we go about identifying the fact that we are getting the wisest use of the dollar? That is what we are thinking about now.

So, we thank the panel for their input with us today, and we look forward to an ongoing relationship with you.

Now, I would like to call to the witness table Ms. Pauline Brooks, Mr. David Brugger, Mr. George Page, as well as Mr. Melvin George.

As they come up, I will just comment that Ms. Brooks is the director of the Public Television Development for Children's Television Workshop. Mr. Brugger is the president of the National Association of Public TV Stations and is accompanied by George Page, who is with WNET Radio in New York; and Mr. Melvin George is with the Great Lakes College Association.

Ms. Brooks, why don't you just go right on with what you would like to share with the committee?

STATEMENT OF PAULINE H. BROOKS, DIRECTOR, PUBLIC TELEVISION DEVELOPMENT, CHILDREN'S TELEVISION WORKSHOP

SCIENCE AND MATHEMATICS EDUCATION

Ms. Brooks. Thank you. I am here to ask that this committee to appropriate sufficient funds to enable the National Science Foundation to continue what we believe is its vital support of science and mathematics education.

The mission of the Children's Television Workshop is to educate young people through mass communications, and the National Science Foundation funds help our efforts in two ways. It has been a major funder of our daily educational science series for children, "3-2-1 Contact," and is a major contributor toward our children's math series, "Square One" TV. NSF is the lead funder of the first season of this series and has committed to two additional seasons at the level of $3 million a year. NSF's funding of both of these programs has leveraged additional funding.

For example, their $5 million commitment to the first season of ""Square One" generated more than double this amount from public and private organizations. Without NSF leadership, "3-2-1 Contact" and "Square One" would not have been produced.

Quality educational television offers a practical, cost effective way to attract children to new opportunities to learn and to extend their educational day.

"Square One" in its first season reached almost half of the U.S. households with a child under 12, and "3-2-1 Contact" is seen by more than 10 million households, since our series are primarily designed for at-home viewing; but they are also used in classrooms and in informal education.

Teacher guides are provided, lots of school clubs have been organized around the country, and several science museums have developed special programs and activities based on "3-2-1 Contact." Education of our children is in crisis. Learned commission reports, public opinion polls, national and international achievement scores all paint the same gloomy picture: a clear and growing need for improved and expanded educational efforts.

VALUE OF EDUCATIONAL TV

Educational television can help meet this need. It is readily accessible to everyone, whether rich or poor; it is a bargain at about a penny per program per day for each viewer; and quality educational television can be put in place relatively quickly.

Continued NSF funding is essential to ensure this ongoing educational service. With your continued support, the NSF science education program, and in particular for the Materials Development and Informal Science Education Division, we can sustain and build on the progress already achieved and address the problems and challenges of the future.

Thank you.

Senator MIKULSKI. Thank you, Ms. Brooks. That was an excellent presentation.

[The statement follows:]

STATEMENT OF PAULINE H. BROOKS, DIRECTOR, PUBLIC TELEVISION DEVELOPMENT, CHILDREN'S TELEVISION WORKSHOP

Thank you for the opportunity to appear before you today. I am here to urge this Subcommittee and the Congress to appropriate an adequate level of funds for fiscal year 1989, to enable the National Science Foundation to continue its vital support of science education, including math, a basic building block of science. I specifically urge that the Materials Development and Informal Science Education Division receive sufficient funds for its activities.

The mission of the Children's Television Workshop is to educate young people through mass communications. NSF funds help the Workshop's educational efforts in two ways:

-- NSF has been a major funder of our daily educational science series for children, 3-2-1 CONTACT.

-- NSF is also a major contributor toward our children's math series, SQUARE ONE TV. They were the lead funder of the first season of this series and have committed to two additional seasons at the level of $3.0 million a year.

NSF's funding of these two programs has been vital in providing the leverage necessary to secure additional funding for these projects and thereby make them available to children throughout the country. For example, NSF's initial $5.0 million commitment to SQUARE ONE generated more than double this amount from a consortium of public and private organizations including IBM, the Mellon Foundation, the Carnegie Corporation, the Corporation for Public Broadcasting and the U.S. Department of Education.

Quality educational television offers a practical, cost-effective way to attract children to new opportunities to learn and thereby extend their educational day. The average child in the United States watches some 25 hours of television each week -- spending nearly as much time in front of the television set as in school. Television cannot replace school, but it can help support the learning that takes place there.

SQUARE ONE TV and 3-2-1 CONTACT are good illustrations of this point. SQUARE ONE TV in its first season reached almost half of U.S households that have a child under 12. 3-2-1 CONTACT is seen by more than 10 million households who watch an average of 2.5 times a month. This results in 12 1/2 million hours of additional educational opportunity.

Last year NSF commissioned a study of home viewers of 3-2-1 CONTACT to determine the impact of the series. The study findings included the following:

-- girls watch as often as boys and minority children watch as often as white children;

-- children with generally low interest in science watch as often as children who profess great science interest;

-- 65 percent of the children who watch do so under their own volition;

-- 50 percent of viewers engage in some science-related activity, such as going to a zoo, museum or library, reading, trying an experiment or solving a problem, with another family member after watching 3-2-1 CONTACT;

-- 60 percent of viewers agree that 3-2-1 CONTACT "makes me feel like I could be a scientist when I grow up."

CTW has been particularly pleased by the positive reactions to our math series, SQUARE ONE TV from children, parents and educators. Steven Leinwand, Mathematics Supervisor for Connecticut, wrote to us, "It is clear that a critical component in improving mathematics education in the United States is the creation of a more positive attitude toward mathematics and the clear demonstration to an entire generation of youngsters that mathematics is useful, important and fun -- characteristics rarely engendered by school mathematics. In an engaging and exemplary fashion, SQUARE ONE promotes exactly this message."

Although SQUARE ONE and 3-2-1 CONTACT are primarily designed for at home viewing they are also used in classrooms and in informal educational settings. Teacher guides are provided to enhance in-school use of the programs. 3-2-1 CONTACT and SQUARE ONE TV Clubs have been organized across the U.S. with the help of community groups, schools and corporate sponsors, and several of the nation's most innovative science museums have developed special programs and exhibits based on 3-2-1 CONTACT.

Education of our children is in crisis. Learned commission reports, public opinion polls, national and international achievement scores all paint the same picture -- a clear and growing need for improved and expanded educational efforts. And the problem of scientific and math illiteracy goes to the heart of this country's ability to compete in the world arena.

Television is not a panacea, but it can help address at least three of the fundamental problems facing education -- accessibility, cost and the long lead time required to institute change in formal educational settings.

Educational television broadcast by public television stations is broadly accessible to almost everyone, whether rich or poor. It is a bargain at about a penny per program per day for each viewer. And quality educational television can be put in place relatively quickly. For example, it takes the Workshop three to five years from idea to premiere to get a new series on the air.

Mr. Chairman, educational programs on public television are an important supplement to every child's education. NSF funding is essential to ensure this ongoing educational service.

With your continued support for NSF's science education program and in particular for the Materials Development and Informal Science Education Division, we can sustain and build on the progress already achieved and address the problems and challenges of the future.

Thank you.

STATEMENT OF GEORGE PAGE, DIRECTOR OF SCIENCE AND NATURAL HISTORY PROGRAMMING, WNET/NEW YORK, ON BEHALF OF THE NATIONAL ASSOCIATION OF PUBLIC TELEVISION STATIONS

Senator MIKULSKI. Now, we would like to go to Mr. Brugger, and I know that you are accompanied by Mr. George Page.

Mr. PAGE. Madam Chairman, I am George Page, and I am here instead of Mr. Brugger.

Senator MIKULSKI. So, you are in lieu of, not in addition to?

Mr. PAGE. Yes, Senator.

Senator MIKULSKI. All right. We will be happy to hear what the National Association of Public TV is saying and, of course, you are with WNET radio of New York.

Mr. PAGE. Yes, Senator. I am the director of science and natural history programming at WNET–13, the public television station serving New York, New Jersey, and Connecticut, and also a major producer and supplier of national programs for PBS; and I am host of the public television series called "Nature."

It is an honor to testify on behalf of the request for appropriations for the National Science Foundation. As you certainly know, Madam Chairman, NSF is a major force in our country in the support and funding of vital basic scientific research in all the sciences.

ROLE OF PUBLIC TELEVISION IN PUBLIC EDUCATION

I am here to urge your support for the Foundation's equally vital work in the area of public education, specifically by funding important science programs for public television, which literally reach millions and millions of Americans, not only high school, undergraduate, and graduate science students, but the general public, which needs to know about important scientific developments if it is to be an informed electorate.

This fall we will premiere on public television a new science series called "The Mind." I believe that most viewers will find much of what we will report electrifying. Let me explain.

NOVA is developing an entire new science; it is something that does not yet have a name, and certainly most Americans are unaware of its existence or its vast importance. We now refer to it as the science of the mind. Perhaps some day it will acquire a more formal designation; but whatever it is called, its importance cannot be underestimated.

SCIENCE OF MIND

The science of mind is the bringing together for the first time in the history of science various disciplines, including neurology, the various branches of psychology, psychiatry, psychopharmacology, archeology, paleontology, artificial intelligence, linguistics, etcetera, etcetera.

Top people in these fields form the advisory board for our television series, nine of them coming together for the first time. And I must tell you that the atmosphere in the room at the time of our first meeting was indeed electric.

The goal of this new science is nothing less than a unified theory of what brain and mind are and how they work. In short, distinguished scientists in our country and all over the world are addressing the ancient question: What does it mean to be human?

As initially reported in a television series, it is a science in its infancy; but already it is a science which is producing astonishing new insights which ultimately will affect us all. For example, it is a science which is developing whole new ways of looking at frailties for drug and alcohol addiction, which are neither purely psychological nor physiological.

It is a science which has developed new knowledge about the pathology of depression, which affects 1 out of 10 Americans. It is a science that is discovering that the aging brain is not necessarily a poorer brain. And it is a science that is providing new insights and its perplexing and controversial questions of psychiatry and the law, new knowledge about the very definition of free will.

TV SERIES "THE MIND"

This is just some of the new information that we will report to the American people in our new 9-hour television series, "The Mind." And, of course, the main part of my testimony is that the series would have never happened without the support of the National Science Foundation.

It is an expensive series, which costs almost $9 million. Not only did NSF give us our first money, a grant of $500,000, but it was instrumental in organizing support from other government agencies, including NIH and NIMH.

Finally, Madam Chairman, I just want to say that the most important thing the NSF gave us was not its money but its blessing. The enormous prestige of the NSF enabled us to raise the rest of the money we needed from private sources.

So, Madam Chairman, I urge continued adequate funding for the education programs of NSF. Thank you very much.

Senator MIKULSKI. Thank you very much, Mr. Page. That was a fascinating set of comments that you gave us. We will be interested in exploring it during the question period.

[The statement follows:]

STATEMENT OF GEORGE PAGE, WNET/NEW YORK, AND DAVID J. BRUGGER, PRESIDENT, NATIONAL ASSOCIATION OF PUBLIC TELEVISION STATIONS

Introduction

The National Association of Public Television Stations (NAPTS) is pleased once again to present testimony in support of the important educational programs funded by the National Science Foundation (NSF). Our membership, the nation's public television stations, has utilized funds from NSF to present to the American public high quality science and math education television programming. We have been grateful for this important federal support which has responded to the clear need for science and mathematics education nationwide.

The Congress and the American public continue to view with alarm the state of science and mathematics education at all levels from elementary to post-graduate. There continues to be a critical national shortage of qualified math and science teachers, and higher levels of science education are losing ground in their struggle to keep up with technology and with counterparts in other countries.

Recent federal efforts to close these gaps and shore up America's competitiveness in science and math have been welcome developments. An important part of these efforts has been the nation's public television stations, whose many science programs continue to attract large audiences at home and in the classroom.

Public Television Fills Need for General Audience Science Programs

We in public television have seen a tremendous response to the many science programs, some of them supported by NSF, that our stations produce and distribute. Science programs distributed by the Public Broadcasting Service (PBS) reach some 18.5 million households--or 46 million viewers--in this country every week. Science and nature programs, with subjects ranging from tigers to sharks to the human brain, represent the top four spots on the list of all time most-watched PBS evening programs. And, taken as a group, science programming on public television geared for all age and education levels attracts more viewers than public affairs or cultural and entertainment programming.

By providing innovative, high quality science programming free to its viewers, public television is not only filling a void for this kind of programming not found regularly on other stations, but it is responding to the hunger the American people have for science education.

Our eight-part landmark series The Brain, partially funded by NSF's Science and Engineering Education Directorate (SEE), first ran in 1984 to wide critical and academic acclaim. This series' overwhelming success pointed very clearly to how the cooperative efforts of the federal government's science-related agencies and the public television system can combine to produce needed, academically-oriented and well-received science programming.

Due to its extraordinary success, a sequel to The Brain series entitled The Mind is being completed and readied for airing in the 1988-89 season. The new series will focus not only on the science of the brain itself, but on what role the brain plays in human development. The interdisciplinary approach used will feature such topics as aging, addiction, communication, and thinking.

WNET/New York, the producer of the series, received an extraordinary advance commitment of $1 million from the nation's public television stations to purchase and carry the series. More important, however, was the initial commitment of $500,000 the series producer received from NSF, and the additional $320,000 the series received from the National Institutes of Health (NIH) through NSF. The highly technical nature of the series, involving the consultation of top-level scientists and the use of advanced video animation, translates into high production costs, in this case estimated at over $8 million for nine one-hour programs. The importance of the support of the NSF in such a monumental undertaking cannot be overestimated.

A fascinating series currently under development at WNET/New York and KCET/Los Angeles for projected airing in 1990 has been given important seed money from NSF. Childhood, an 8-10 part series which will explore the concept of childhood, taking a look at how parents and societies have raised their children throughout history, has received a total of $400,000 from NSF to start its production.

The weekly science series NOVA produced by WGBH/Boston, received initial important NSF support in 1972 and was continually nurtured by the NSF until our stations could afford the programs' cost themselves. Three NOVA programs appear on the list of most-watched programs in PBS history; the series is regularly seen by as many as 20 million Americans per broadcast. Nearly 95,000 high school teachers use the series to educate over 10.5 million students nationwide, making them the most widely used PBS programs as instructional television in our nation's schools.

In late FY1987, NSF awarded $160,000 to the independent producer East Side Productions for a film titled "Stand and Deliver", a dramatic presentation starring Edward Olmos that focuses on the life of a high school calculus teacher in an Hispanic neighborhood. The film, currently in limited movie distribution, received additional funding for its future television release through the public television consortium American Playhouse.

Math and Science for Children: A Public Television Specialty

In the area of children's science and math educational television, the NSF has helped make possible the development and production of 3-2-1 Contact and the new math series Square One TV. Both of these series are geared to the 8 to 12-year-old viewer, and both are produced by the Children's Television Workshop, producer of Sesame Street and The Electric Company. In addition, NSF funds for series like Reading Rainbow and others have helped interest children in math and science and have served as useful classroom tools for elementary school teachers.

Square One TV premiered on public television in January of this year after CTW spent years in researching and producing 75 half-hour programs that would hold the interest of children while teaching mathematical concepts. The design of Square One TV was made by close collaboration of producers, researchers, academics, and children. Teachers are using the show both in the classroom to supplement lessons and as homework to reinforce mathematical skills. Two grants of $3 million each for FYs 1987 and 1988 from NSF have been crucial in developing this show, as well as in attracting financial support from the Andrew W. Mellon Foundation, the Carnegie Corporation, and the IBM Corporation.

3-2-1 Contact is carried on 218 of our public television stations and is seen by 7.5 million viewers each week. NSF provides partial funding for the series, including $1.75 million this year. Substantial funding help from the U.S. Department of Education allows for the yearly production of new episodes to the series. The series is designed not only to educate young people in science subjects, but also to encourage their interest in scientific study. Over 750,000 elementary school teachers receive the program's companion teacher guide, and science museums and schools have established weekend activities to support and extend the enthusiasm created by the program.

A continuing funding commitment from the NSF has allowed another of public television's very successful children's series to expand its scope. Reading Rainbow, the highly acclaimed summer reading series hosted by LeVar Burton is co-produced by Great Plains National Instructional Television Library and public TV station WNED/Buffalo, New York, in association with Lancit Productions, New York City. This series received a commitment from NSF to add special science programs to the series. NSF has awarded the series $250,000 a year for three years for new programs featuring science reading. Other major funders include the Corporation for Public Broadcasting (CPB), B. Dalton Booksellers, and the Carnegie Corporation.

Reading Rainbow has already prompted measurable interest in summer reading by children nationwide. According to the results of a survey completed by RMC Research of children's librarians, 46% of those surveyed reported an increase in summer reading prompted by the series, 67% of the librarians attributed at least some degree of increase in book circulation to the series, and most importantly, 75% believed the series also stimulated parents' interest in children's reading. The results of this national survey paint Reading Rainbow as an unqualified success from the perspective of children's librarians. With the addition of new science programs to the series, more enthusiasm has been generated for science reading and learning during the school vacation months.

Last September, Solve It was first beamed into America's 6th grade classrooms, a first-time NSF/SEE grant to the Agency for Instructional Technology, (AIT) Bloomington, Indiana, intended as direct classroom instruction in mathematics. NSF provided $497,000 of Solve It's $1.165 million budget, with the rest coming from the education departments of twenty-two states. Solve It consists of eighteen 15-minute math lessons, and is the third in AIT's trilogy of Math for the 80's series.

Formal Science Education at All Levels Assisted by Public Television

We are all too well aware of our need to upgrade science teaching nationwide. From our perspective in public television, this situation is as unfortunate as it is unnecessary. The program production and distribution capabilities of this nation's educational television system offer a unique resource for the improvement of elementary, secondary, and post-secondary science and mathematics education on a wide scale and in a cost-effective manner. Because our system reaches about 95% of the U.S. population, it is especially well-suited to reaching vast numbers of people as well as targeting specific pockets of students. Public television stations can develop and provide a comprehensive package of teacher-training materials--programs that can be used as in- service teacher training or as college-credit courses.

Public television also needs more college level courses, not just for our teachers, but for others in the workforce who need to upgrade their education. PBS's Adult Learning Service (ALS) is doing just that. By providing "telecourses"--college-level television series supplemented and reinforced with textbooks, study guides, and class meetings--PBS is reaching half a million college and university students at over 750 institutions of higher learning across the country.

A survey commissioned by the CPB/Annenberg Project of ALS students found that over two-thirds of the students were female, only 23 percent of the students were of traditional college age (18-22 years old), most were in 23-29 year old categories, and the proportion of women increased with age. The survey also showed tht 40 percent of the students in telecourses enrolled because an on-campus section of the course would conflict with their work schedules.

The series The Brain is the basis for the television course Brain, Mind and Behavior currently offered by the ALS. A physics course produced by the California Institute of Technology and the Southern California Consortium and offered by ALS, The Mechanical Universe, is attempting to provide three levels of physics instruction, one of them in cooperation with NSF. The Mechanical Universe can be geared either to liberal arts students fulfilling a general science requirement, to the science or engineering majors demanding more rigorous preparation, or to the secondary school teachers seeking to upgrade their physics teaching skills.

NSF has sponsored this last application by initiating a project in which parts of the course have been adapted for use in high school classrooms. Teachers who find themselves teaching high school physics in spite of inadequate preparation will find that by enrolling themselves in The Mechanical Universe course and using the NSF video modules in their classes, they will be able to present their students with instruction of the highest quality.

Because of the success of The Mechanical Universe, the CPB/Annenberg Project is now developing a pilot for The Chemical World, a one-semester television course in introductory chemistry for non-science majors. Projects like this and the teacher guides accompanying it would also benefit from NSF support.

In Arizona and South Carolina, public television stations are providing graduate level technological, engineering and business administration courses. In Arizona, these courses are being used by IBM, Burr Brown, Hughes, Motorola and other electronics firms as well as the Army's electronics facility at Fort Huachaca and Sierra Vista. In South Carolina, 60 percent of the graduate degrees in business administration and engineering that are conferred by the University of South Carolina each year go to these telecasting students. This service helps our nation's workforce and servicemen and women improve their skills and fosters our nation's international industrial competitiveness as well.

Conclusion

With the steady support of NSF through the years, public television has provided high quality science programming that equally fascinates and educates its intended audience. Our audience response has shown us that we need to develop more regular series like NOVA that explore new technology and scientific innovation and more limited series like The Brain and The Mind that explore specific scientific fields. The tremendous success of Square One TV, 3-2-1 Contact, and our college courses has shown that more efforts in those areas can help conquer "science fear" in our nation's student body.

The critical assistance and guidance provided by the National Science Foundation's Science and Engineering Education Directorate will continue to be necessary to achieving those goals. We believe that the success of these TV projects suggests the need for reasonable increase in this category at NSF. These projects are an important part of NSF's overall education strategy in strengthening America's science and math education at both pre-college and higher eduction levels.

We are also aware that the U.S. Department of Education has previously and, in our view, wisely, matched funds with NSF on several of these media projects, including 3-2-1 Contact and

Square One TV. We recommend that the Congress encourage the Department of Education to continue its participation in this very useful manner.

We urge you to appropriate as much as you can for the work of the National Science Foundation and that NSF be encouraged to direct as much as they can to using our nationwide system of public television stations to help bring more science information and education to all Americans.

Thank you.

STATEMENT OF MELVIN D. GEORGE, PRESIDENT, ST. OLAF COLLEGE, NORTHFIELD, MINN., ON BEHALF OF THE GREAT LAKES COLLEGE ASSOCIATION

Senator MIKULSKI. Now, Mr. Melvin George, who is with the Great Lakes College Association. Is that correct?

Mr. GEORGE. I am actually president of St. Olaf College in Northfield, Minn., and I here representing 28 different undergraduate liberal arts colleges in 11 states, identified in my written testimony.

Senator MIKULSKI. And they are organized primarily in the Great Lakes area?

Mr. GEORGE. There is the Great Lakes Colleges Association, the Associated Colleges of the Midwest, and then three other individual institutions, ranging from Connecticut to Oregon.

Senator MIKULSKI. Fine, thank you. Please let's hear your testimony.

Mr. GEORGE. Thank you.

UNDERGRADUATE SCIENCE EDUCATION

Mr. GEORGE. Although I will speak mostly about the support of undergraduate science education in the National Science Foundation Budget, I want to make clear at the outset that I am in support of the foundation's total request for fiscal year 1989 of $2,050,000,000.

Difficult as it may be to approve that entire amount, I urge the Congress to do that as an investment in this nation's future well-being in agriculture and health and defense and transportation and energy, all of those fields which are so dependent on science and technology.

But as the Congress so well knows, science does not consist entirely of exotic research projects, graduate education, or big science. I spent the first 25 years of my professional life at large public research universities, and so I know and respect that setting; but I speak now for undergraduate science, for it is at the undergraduate level that young people really make decisions about whether or not to become scientists.

The liberal arts colleges I represent have historically had very strong undergraduate science and mathematics programs. The percentage of our undergraduates majoring in science is about two and a half times the national percentage of undergraduate majors in science on campuses around the country.

So, we are very productive in training young scientists. The Congress has long supported undergraduate science, which needs more help than the present budget request of the NSF proposes.

The National Science Board's 1986 Neal Report urged annual expenditures at the undergraduate education level by fiscal year 1989 at a level of $113 million. That is more than twice the amount contained in this present request.

We need funding for modern laboratory equipment, for faculty development, for additional opportunities for undergraduates to participate in research as a part of their science education, and for curricula developments in such important fields as microbiology and cognitive science, which is what we call the science of the mind.

We also have facilities needs, but frankly, these items that I have mentioned from the Neal Report are of higher priority. At our kinds of institutions, undergraduates work alongside real faculty members in real laboratories. They get their hands dirty, and that is why proportionately so many more of our students choose science.

If we had additional support, to include both the numbers of students and the quality of training the students receive, we could do even more to fill this nation's future needs for researchers and scientists of all kinds; and those needs are enormous.

It is estimated that there will be a shortage of 700,000 scientists and engineers in this country by the year 2010, and that gap will not be filled simply by more support of graduate education and research.

The chart appended to my written testimony clearly shows that the NSF supports of few people at the entry levels of science—high school and undergraduate. It supports many more people at the level of graduate students, senior scientists, and postdoctorals.

We think this policy restricts the pipeline of scientists for the future, and it is this concern that leads me to ask the Congress to continue its strong interest in undergraduate science. We respectfully suggest that the proposed science and technology centers could be deferred in order to make possible more progress at the level of undergraduate science, such as recommended in the Neal Report.

Thank you for your interest, both in the NSF as a whole and in undergraduate science components of that budget request.

Senator MIKULSKI. Thank you very much for your testimony.

[The statement follows:]

STATEMENT OF MELVIN D. GEORGE, ST. OLAF COLLEGE, ON BEHALF OF THE GREAT LAKES COLLEGES ASSOCIATION, THE ASSOCIATED COLLEGES OF THE MIDWEST, AND CONNECTICUT COLLEGE, REED COLLEGE AND ROLLINS COLLEGE

I am Melvin George, President of St. Olaf College in Northfield, Minnesota. I am very glad to have this opportunity to speak with you about the request of the National Science Foundation for funding for fiscal 1989. I speak on behalf of the twenty-five undergraduate liberal arts colleges making up the Associated Colleges of the Midwest (ACM) and the Great Lakes Colleges Association (GLCA).[1/] In addition, I speak for Reed College in Oregon, Connecticut College, and Rollins College in Florida.

These institutions which I represent are particularly interested in the support by the National Science Foundation for undergraduate science, and I will direct most of my testimony to that part of the Foundation's request. But let me first say that I speak in complete support of the Foundation's total request of $2 billion 50 million.

Even as far as I am from Washington, I recognize that it may be difficult to approve this full amount for the Foundation. I appreciate the budget problems and demands which face this committee. But I urge you to consider seriously the enormous need for investment in our future well-being and security, both of which are heavily dependent on a flow of new scientific ideas and the technology that derives from those ideas. Whether we consider agriculture, health, defense, transportation, power, or any of the host of other human activities dependent upon science and technology, the future of this nation is literally at stake when you make a decision about the National Science Foundation's budget.

For too long we as individuals and this nation as a society have made short-term decisions that have put our long-term future in jeopardy. To fail to increase significantly our investment in our future through the National Science Foundation would be another mistake for the long run, I'm convinced. The Foundation's budget request for fiscal year 1989, if funded, would make possible a major step toward restoring America's lead in science and engineering research and education, and we will all be the beneficiaries of that. I commend Director Bloch for his clear articulation of the needs of science, mathematics, and engineering in the United States, and I hope his request will receive your support.

When most people think of science and the National Science Foundation, they think of exotic research projects, graduate education, "big" science. I spent 25 years of my professional life at large public research universities, and so I am very familiar with that milieu. My purpose in being here today is to remind the Subcommittee that the source of this nation's scientists and mathematicians, and indeed, the most significant part of the pipeline that results in improved science activity in this country, is exactly the undergraduate level of higher education and, more particularly, the fine liberal arts colleges of this nation such as those I now represent. The National Science Foundation has historically had a dual mandate to support research and science education, including research and education at the undergraduate level, and I am grateful for the interest of the Congress and the increased support of Dr. Bloch for undergraduate science and mathematics education. I would like to focus with you this morning on the importance of the undergraduate level and in particular of the contribution of fine undergraduate liberal arts colleges, such as those I represent, to our scientific enterprise. For while my own background is the large research university, I am proud now to be at a different kind of institution, but one of comparable quality.

These liberal arts colleges have historically had very strong undergraduate science and mathematics programs. These colleges are particularly important because they produce such a significant fraction of the nation's future scientists. Nationally, less than 8 percent of all undergraduate degrees awarded in the United States are in the basic sciences or mathematics; at a group of forty liberal arts colleges in the so-called "Oberlin Group" the percentage is nearly 19 percent.[2] So there is a significant commitment to science and mathematics education at our kinds of institutions, and apparently we are carrying out the commitment well, as students find majoring in science or mathematics on our campuses an attractive educational choice.

Many of these institutions have historically produced students who go on in significant numbers to get graduate degrees and do research and contribute to the science and technology base of this nation. In my own state of Minnesota, for example, it is interesting to note that the liberal arts colleges educate about 22 percent of the state's undergraduates, but approximately 50 percent of the Minnesota residents in graduate programs in most of the sciences and mathematics at the University of Minnesota come from these liberal arts institutions. So we have been major feeder institutions to graduate science programs and hence to research and other scientific activities requiring advanced training throughout the nation. I invite you to consider what will happen to the entire science enterprise in America if the scientific pipeline is either restricted at the undergraduate level or, even worse, if the quality of training these undergraduates receive deteriorates further. It is for these reasons that the undergraduate science education components of the NSF budget request are so significant, not only to the institutions I represent, but also to you, having prime responsibility for the future health of our entire science, mathematics, and technology program, and, indeed, to the research universities themselves, as they depend heavily on us for their graduate students.

The Foundation has certainly increased undergraduate science education support significantly since the three-year period 1982-84 when it allocated exactly zero dollars for this purpose. I am grateful for the encouragement of Congress and the leadership of Dr. Bloch in this area. But the fiscal 1989 budget request is still extremely inadequate, as within a total request of $2 billion 50 million, the components of support for undergraduate science, broadly construed, total less than $50 million. As you know, this amount covers programs appearing in several places in the request, ranging from the Research Experiences for Undergraduates (REU) program to instrumentation programs, undergraduate curriculum development, faculty support, and encouragement of women and minorities.

It's especially noteworthy that the Foundation seems to have forgotten the strong position taken by its own National Science Board in 1986. That body's report, known as the Neal Report,3/ pointed out the threat to the nation's future supply of scientists due to the erosion in the quality of the nation's undergraduate science education. The National Science Board recommended that NSF immediately act to reverse this pattern of neglect and "by fiscal 1989 increase annual expenditures at the undergraduate level in science, mathematics, and engineering education to achieve an annual budget of $113 million." Actually, that goal is modest; in 1987, Dr. Neal testified that this amount should be significantly greater if NSF's plan for a doubled budget within five years is approved by the Congress.

The National Science Foundation proposes $23.5 million for programs in the Science and Engineering Education Directorate and another $26 million for other science programs related to undergraduate education which appear elsewhere in its request. This total of less than $50 million is more than $60 million short of the goal for undergraduate science education set forth by the National Science Board for this fiscal year's budget. I think that is not acceptable.

Why is undergraduate science and mathematics education so important? I mentioned earlier that the undergraduate level is the base on which all further training in science and mathematics, and hence all future research in these fields, must be built. And that base is very fragile and very narrow indeed. I call to the Subcommittee's attention Appendix A, a graph using the National Science Foundation's own figures on support of human resources, which Mr. Bloch cites as the agency's first priority. The NSF budget has an inverted pipeline of support, which cuts off potential careers in science, engineering, and mathematics, with a scant 3,000 high school students receiving NSF support, and a mere 9,300 undergraduates receiving such encouragement. Where will the senior scientists of tomorrow come from? Perhaps from other nations, where young people are receiving better schooling in science and mathematics. I seriously doubt if that's the answer which the American people wish to have.

But it is not only a matter of the numbers, it is certainly a question also of quality. The institutions I represent are doing a fine job, I believe, within the limits of their resources. These liberal arts colleges are places in which young people work side by side with scientists at laboratory benches or with mathematicians in exploration of mathematical questions. They are places in which young people are engaged at the cutting edge of science and mathematics almost from the beginning, and they get hooked on science. It's this kind of close personal interaction between faculty members who are themselves research scientists and mathematicians and active young exploring minds which makes for such a lively climate for science at our institutions and accounts, I believe, for the relatively large numbers of students majoring in science and mathematics on the campuses of the institutions I represent.

This kind of interaction between students and regular faculty is extremely important, because early mentors influence the lives of students in these years and make indelible impressions. And science is best learned by doing science, not by hearing about it in a large lecture hall or from a graduate assistant who is still far away from being a research scientist. Young men and women at these liberal arts colleges learn "real" science, they get their hands dirty, they can actually participate in the creation of knowledge, whether scientific or mathematical.

In addition, these undergraduate colleges are (or should be) the curricular laboratories for the nation. High-quality liberal arts colleges have unique curricular flexibility to innovate; they are small enough to permit responsive experiments, and involved enough in research to know what new areas need emphasis. Curricular concerns were evident in the Neal Report on undergraduate science as they have been at my own college, St. Olaf.

As important as these colleges are for science and mathematics, they are woefully short of resources. Our equipment base is eroding, and additional faculty support and curriculum development are essential to maintaining cutting edge programs. We desperately need more opportunities for undergraduates to get hooked on science through involvement in research in laboratories with modern equipment. In the area of curriculum development there are significant gaps — microbiology, superconductivity, chaos, cognitive science, and expert systems are but a few of the many examples of exciting science of the 1980's that should be part of the undergraduate science and mathematics experience, but which are not yet in most places. These needs cannot be met without NSF support significantly greater than what is requested

— namely, less than one-half of the total which the Neal Report recommended for fiscal 1989.

In addition to more funding for present programs, the goals identified by the National Science Board, confirmed by scientists and mathematicians in our institutions, could well be served by following that report's recommendation to restore some of the fine programs which the NSF education division administered in the period following Sputnik, programs such as the Science Faculty Fellowships, CAUSE, and Local Course Improvement. We have for many years expressed our gratitude for the dramatic improvements in our ways of teaching science which these programs made possible. It's been good to hear our colleagues in elementary and secondary education, and recently some members of Congress, also praise those former programs and urge their reinstatement.

St. Olaf College has benefited enormously in the past from NSF grants in support of undergraduate research, faculty enhancement, and laboratory equipment. It was a grant under the old Undergraduate Research Participation program in the late 1960's in our mathematics department that enabled that department at St. Olaf to begin pulling itself up from a position of weakness which was then so typical of small college mathematics departments. And please excuse me if I concentrate so much on mathematics; being a mathematician myself, I recognize the central role which mathematics plays in all of science and perhaps give it more stress than I should. But mathematics is fundamental to science — without strong mathematics we simply cannot have strong science or engineering, and I'm very grateful that the National Science Foundation has recognized that central role and has recognized that mathematics is at a point in its development which is worthy of special support.

These liberal arts colleges that I represent not only can but do contribute to the dual national science mission of research and education. They produce fine people who become the graduate students and the researchers of tomorrow, they support and encourage curriculum developments which serve as models for the rest of the nation, and they maintain a sense of unity between science education and research that nurtures both and makes them better. But they must be enabled to do more if the nation's scientific strength is to be restored.

I am all in favor of support of graduate students. I was a graduate student myself, and I helped train them for many years as a faculty member at the University of Missouri. But I know that graduate students have already made their commitments to science or mathematics. If we are going to broaden the base of science and mathematics and engineering in this nation (and such broadening is essential for our national security and well-being, I believe), we simply must focus more attention, energy, and resources on the recruitment of undergraduates and the strong training of undergraduates in science.

I make one final point. If there is one major problem at the National Science Foundation, aside from inadequate funding for undergraduate science education, which hurts the institutions I represent, it is the persistence of narrow and short-range objectives in judging research proposals generally. Whether a research project is to be done at a liberal arts college or a major university ought to be irrelevant. And the potential of research for long-term benefit, including the ability of a research project to attract students to science, ought to be taken into account in such judgements. It is this broader and longer-range view that I urge Congress to support at the National Science Foundation. The greatest long-term benefit to the nation will be to encourage thriving research projects on college and university campuses which attract and educate students in science and mathematics. The Research Experiences for Undergraduates (REU) program can do exactly this, and for that reason the institutions I represent urge that the REU be more widely available to support researchers and their students on our campuses. The REU program has some artifical restraints which unnecessarily limit its usefulness. For instance, a researcher without NSF support is not able at the present time to seek funding from REU for undergraduate student participation, and the requirement that students from other campuses be part of any REU project, while admirable in its goal, should be modified.

I am grateful for the interest of the Congress in science and mathematics and technology in the United States. I commend the National Science Foundation and its director for this forward-looking budget request. I urge in the strongest possible terms that the Congress provide the entire amount which Dr. Bloch has recommended, since I believe that such an investment in this nation's future is absolutely critical. And within that appropriation, I hope the Congress will insist that the Foundation find increased support for undergraduate education and research. If the Science and Technology Centers are initiated on a more modest scale, for instance, the funding for undergraduate science education programs can be increased. For without a strong base at the undergraduate level, the nation's entire science and technology superstructure is inevitably doomed to collapse into mediocrity.

Our institutions want to continue to do more than our share in meeting this national need for well trained scientists. We ask only for the support and resources and encouragement which are essential to do that job and the understanding that what we are about is a matter of long-term benefit to the nation rather than the production of only short-term results.

I thank you for the opportunity to speak on this important matter.

NOTES

[1] The members of GLCA are DePauw, Earlham and Wabash in Indiana; Albion, Hope and Kalamazoo in Michigan; and Antioch, Denison, Kenyon, Oberlin, Ohio Wesleyan and the College of Wooster in Ohio. Members of ACM include Colorado College; Knox, Lake Forest and Monmouth in Illinois; Coe, Cornell and Grinnell in Iowa; Carleton, Macalester and St. Olaf in Minnesota; and Beloit, Lawrence and Ripon in Wisconsin.

[2] Sources: Digest of Educational Statistics, U.S. Degrees in 1984-85, and

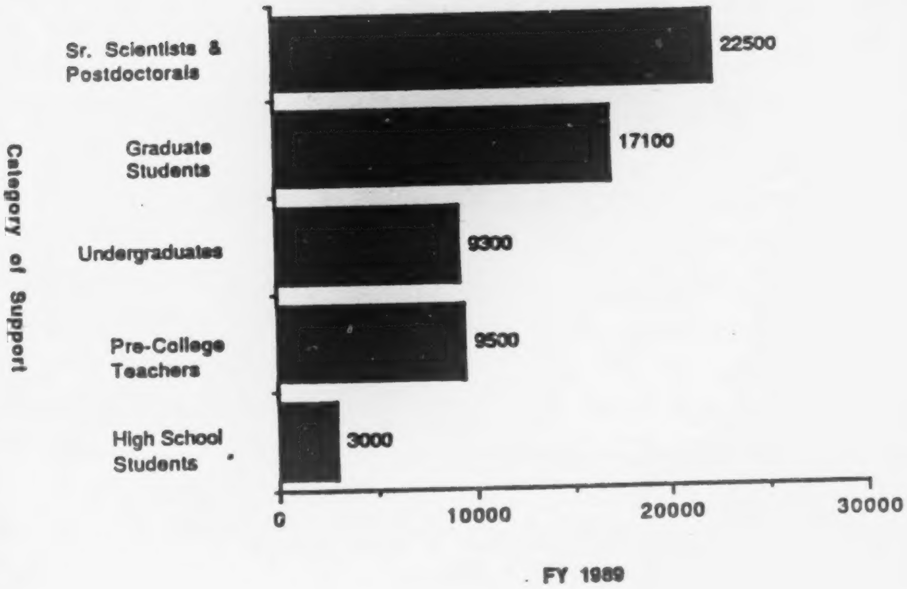
Maintaining America's Scientific Productivity, Preliminary Draft, 1986,

by Sam C. Carrier and David Davis-Van Atta (p. 8)

[3] Neal, Homer A., for the National Science Board, Undergraduate Science, Mathematics and Engineering Education: Role for the National Science Foundation and Recommendations for Action by Other Sectors to Strengthen Collegiate Education and Pursue Excellence in the Next Generation of U.S. Leadership in Science and Technology (Washington, D.C.: Government Printing Office, March, 1986).

APPENDIX A

PERSONS RECEIVING NSF SUPPORT IN FY 1989



Source: FY 1989 Budget Briefing Materials, National Science Foundation

Graph prepared by Grinnell College, April 1988

Senator MIKULSKI. I want to pursue some questions around the instructional materials development; but first, a clarification, Mr. Page. When you talk about this new science that has been born—the science of the mind, this interdisciplinary approach—are you saying that the communications people who are putting together this series pioneered in pulling all these folks together in one room at the same time?

Mr. PAGE. No, Madam Chairman. I wouldn't dare suggest that we are responsible for it; however, I do think we, in a sense, served as a catalyst to further work that was already going on among these various scientists.

And some of these individuals on our advisory board had not come together and had a chance to exchange ideas and thoughts with their colleagues until our first meeting, which made it a very exciting meeting.

Senator MIKULSKI. Thank you. Let me just throw this out for the panel and get your reactions.

INSTRUCTIONAL MATERIALS DEVELOPMENT

The National Science Foundation is requesting $18 million in instructional materials development; and I will tell you where I am heading, which is: Do you think they are getting the most bang for the dollar, when I give you their request and what has happened over the last 10 years.

This is an increase of 9 percent over the 1987 appropriation. In 1989. NSF requested $11 million for developing and evaluating course material, experimenting with out of school methods, developing methods for science education. And during that decade we have seen a relative understanding of science and technological concepts as a nation, compared to other countries' fall.

And NSF released a survey recently that involved students at the 5th, 9th, and 12th grades in our country who performed poorly in science compared to their counterparts around the world; and they wanted a new curriculum development for students in grades 7 through 12.

So, now they need more money, they have spent more money, and yet we seem to be declining in interest. Could you comment on why we haven't done better and whether more money is the answer and maybe a new way of looking at the world, not a new way of looking at the way we spend our money? Anybody?

Mr. GEORGE. I think the materials in question is more appropriately directed to my colleagues on the right here. I would simply say I have never taken the position that more money is the solution entirely to any problems.

We have a lot of problems with science education in this country, and one of them is the expectations that we have of teachers and students alike.

Ms. BROOKS. I couldn't help but think with you all talking that, perhaps, serendipitously in a way I am sort of representing our target age range, 8- to 12-year-olds, and this gentleman is talking about undergraduates and Mr. Page about the adult general population. So, perhaps we all are representing different age groups.

We feel that our programs are directed to youngsters, and it is important to catch them at that age before they even get to be undergraduates. It is as they go from 12 to 16 that they start to make those decisions, and I think that the information and education they have received before that age has a large bearing on what they do in the future.

I don't know if all the money that the National Science Foundation will spend on actual materials for schools—I really can't speak to how effective that has been. Research does show that our own programs have had some effect on how children react.

For example, the National Science Foundation itself commissioned a study on home viewing of our science series, "3-2-1 Contact"; and it proved that indeed boys watched as often as girls, and minority children as often as white children, that kids viewed voluntarily, and 60 percent of them were motivated after viewing to do some other science-related activity with a family member, whether it was going to a zoo or a museum.

To us, that kind of education, which is motivating, is very important. So, certainly, I have a bias in saying that I think that NSF supporting projects like ours is very worthwhile. We are funded by the Informal Science Education Division, which I believe is materials development research and informal science education.

There may be another division for instructional programs, but I am not sure.

Mr. PAGE. I would just like to say that the production of these materials is extremely expensive, and $18 million is not a lot of money when you are talking about distributing materials nationally to, for example, every high school in this country or every college and university in the form of study guides or whatever.

And the production of high-quality television programs, which are also distributed in cassette form to colleges and universities, again, is extremely expensive. I would tend to think that the request, Madam Chairman, is modest in terms of the work that needs to be done.

VALUE OF ELECTRONIC MEDIA

Senator MIKULSKI. The Proxmire staff advises me we have to move on. I could spend a lot of time with this panel because, first of all, I think you are onto something. And when we talk about your work, Ms. Brooks, say with "Square One" and "3-2-1 Contact," even though they are oriented to children, many adults of my generation are not exactly technically literate any more.

What I learned in high school biology, my niece is doing for a Brownie badge. And when we talk about the expansion of knowledge and information, many of us adults find quite an interest in the children's shows.

We indeed know that the electronic media is one of the most powerful forces in our society. What I find so fascinating about your TV shows is, one, that it starts to break down the stereotypes about science inquisitiveness and science interest. Girls are as interested as boys; minority kids are as interested as white kids.

And then you have access; so, when they are watching TV, someone from a Ph.D. family has the same access to information as a welfare mother. Whether you are well known or in Manhattan, you have this information.

And I also think that it is a factor in children's imaginations that gets them ready to be undergraduates. That is one thing that I just mentioned to the National Science Foundation people, and it goes to this so-called informal education, because that is where I think that we are talking about child development.

For children age 9 to 12, child development people call that the "age of the little professor." And that is when they are quite eager to learn; they are much more aggressive and much more inquisitive, and it is there for the taking.

We suggested that they be more involved with scouting in traditional children's activities so that, for example, using new TV shows, the pursuit of badges could involve technology and hands-on that you know are exciting.

I think what you are bringing to our attention is really quite exciting; and most of all, what I like is its access, that goes across all those barriers, the barriers to opportunity in our society. So, I think what you are doing is quite exciting.

I don't think we have any more questions.

We have now been joined by the chairman of our committee, Mr. Proxmire.

We are just wrapping up this panel, Senator. Did you want to ask anything?

Senator PROXMIRE. No; I just wanted to commend you on your statement. I only heard the last part of it, but it was terrific.

Senator MIKULSKI. Well, thanks.

Ms. BROOKS. We appreciate your remarks as well about our programs. Here are some magazines you at least might like to look over.

Senator MIKULSKI. Thank you, and please keep up your own good work.

Mr. GEORGE. This whole notion of entry level into science is particularly important, and I appreciate your comments about that.

Senator PROXMIRE [presiding]. Thank you.

PREPARED STATEMENTS ON NATIONAL SCIENCE FOUNDATION

The committee has received statements submitted by a number of interested organizations. Without objection, they will be inserted into the hearing record at this point.

[The statements follow:]

STATEMENT OF THE ASSOCIATION OF AMERICAN UNIVERSITIES

On behalf of the associations listed below I write to ask that this letter be made a part of the Subcommittee's hearing record on the FY 1989 appropriation for the National Science Foundation.

Again this year, the Subcommittee faces an excruciatingly difficult task. It is clear that you do not have enough money available to meet the legitimate, indeed essential, needs in all of the areas for which you bear responsibility. How are you to know which of the various programs for which you are responsible are really critical and which others are merely important? Let us respectfully suggest a way.

Research and education are the foundation of everything we need to accomplish in this country. We would urge you, therefore, first to fund the core research activities and education programs of the National Science Foundation and fund them at the full, authorized level, because they demonstrably contribute to improving the quality of our science and engineering research and education base. We especially urge your support of the investigator-initiated research programs of the Foundation. They are the backbone of NSF's activities and the foundation of the nation's productive research enterprise. Despite successive substantial budget proposals, the core programs funded as Research and Related Activities have been held constant in real terms for the past four years. The 10-percent increase proposed for the Foundation's Research and Related Activities merits your priority consideration.

Second, we urge you to fund the full 12-percent increase requested for the Foundation's science and engineering education programs. Elementary and secondary education constitute the badly eroded foundation of the country's education system. NSF plays an important leadership role at the K-12 grades as well as at the undergraduate and graduate levels. NSF's initiatives to strengthen science and engineering education at all levels deserve a priority claim on the nation's resources.

It might appear, at first glance, that we have relegated the Foundation's important proposals for science and technology centers to a poor third place. Not at all. The future of interdisciplinary research in engineering and science depends first on a strong, healthy core research base. It also depends on the ability of our institutions to forge new linkages at the fertile boundaries of the disciplines, to foster creative interactions among investigators, and to encourage new cooperative relationships between universities and industry. The proposed centers offer the promise of stimulating and facilitating these interactions. It will be a pity if these investments are again deferred, as they were in FY 1988, and placed in competition with the core research and education programs of the Foundation.

We believe that result can be avoided if you focus on the right question with respect to the terribly important programs of the National Science Foundation. The wrong question is: How many grants of which size and type should the Foundation make? The right question is: Given the level of funding available, how can we best assure the most high-quality research and education for the money? Our answer to that difficult question is that the Foundation should first fund adequately the highest priority research endeavors represented by the request for a 10-percent increase in Research and Related Activities and the 12-percent increase requested for the Science and Engineering Education Directorate.

Saying this does not mean that we in any sense oppose the request for the interdisciplinary science and technology centers. We fully support the Foundation's request for the centers, especially the management principle of full funding for centers awarded. We note, however, that the authorizing committees in both the House and Senate have ordered the Foundation's priorities so as to protect and strengthen the Foundation's Research and Related Activities and Science and Engineering Education programs with consequent reductions in the new centers program. NSF should not be forced to fund its core research programs inadequately in order to undertake the highly valued centers program. Inadequate funding of both the core programs and the centers program will only serve to weaken the entire enterprise. As difficult as it is to say so, in the present climate of severe budgetary restraint, priority must be given to the core research programs which have been flat funded in real terms since FY 1985.

Finally, we are pleased to note that both House and Senate authorization committees include among their priorities for the Foundation in FY 1989 a program to begin the modernization of academic research laboratories. They have done so, we believe, without damaging any of the ongoing research programs of the Foundation. We believe that the need for such a research facilities modernization investment is well documented and that the proposals of the authorization committees have been carefully developed to take into account the needs of all research performing institutions. We hope that agreement on the final authority for the program will include authorization for modernization of both graduate and undergraduate research facilities, and will be achieved before you act on the FY 1989 appropriation for the Foundation. If so, we urge you to fund the research facilities program at the level of the final authorization and in the Committee's report to address the need for a long-term investment plan for research facilities.

Suggesting priorities isn't easy for us. It will be quite controversial in some quarters. We submit, however, that there is no other approach to the research and education needs of the nation that will do less damage to the programs of the National Science Foundation while meeting the research, education, and infrastructure needs of the academic research and education enterprise.

Finally, we commend to your attention the enclosed statement by the newly established Coalition for National Science Funding. More than fifty national organizations are participating in the CNSF effort to state the case for national investment in the research and education programs of the National Science Foundation. We are pleased to lend our voices to the CNSF effort.

The following associations join in this letter:

American Council on Education
Association of Graduate Schools
Council of Graduate Schools
National Association of State Universities and Land-Grant Colleges

STATEMENT OF THE TASK FORCE ON THE NATIONAL SCIENCE FOUNDATION OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

We appreciate the opportunity to submit our views on the proposed fiscal year 1989 budget of the National Science Foundation. The American Society of Mechanical Engineers (ASME) is a nonprofit educational and technical organization with 118,000 members, including 22,000 students. This statement was prepared by a task force of the Council on Education of the American Society of Mechanical Engineers. It represents the considered judgement of the task force, a group of experts in the field, rather than an official position of ASME.

ASME continues its vital interest in the successful implementation of the full range of NSF programs. The task force endorses the Administration's plan put forward in FY 1988 to double the NSF budget in five years. These comments, however, focus primarily on those aspects of the budget request affecting the contributions of engineering research to national goals.

We are in an age of technology. To a great extent, the future economic strength of the United States will depend on maintaining superiority in technology. Most of the spectacular technological advances of this century, from radar to nuclear power, from the transistor to the laser, from computers to optical communications, have been critically dependent on the basic scientific and engineering research that has been typically supported by NSF. Unless we continue to advance this base, the ability of the U.S. to continue to be a leader in the development of new technology will be impaired.

OVERVIEW: NSF ENGINEERING BUDGET

The FY 1989 budget request for the NSF Engineering Directorate is $194.96 million. This is an increase of $23.48 million or 13.7

percent over the current FY 1988 plan of $171.48 million. We are disappointed that this increase is smaller than the proposed increase of 19 percent for NSF overall. Even if the request is approved in full--an unlikely prospect based on the experience in recent years--it is modest when one considers that there has not been a significant increase in the NSF basic engineering programs for the last three years. If, as has been the case recently, the budget eventually is trimmed below the request, the NSF engineering program runs the risk of ending up with a seriously inadequate budget. This will make it difficult if not impossible for NSF to balance its support for programs that foster economic vitality with those that ensure the long term health of basic engineering research.

In FY 1985, NSF supported a larger fraction of engineering research at universities than any other federal agency. In FY 1986, this was no longer true. This is an unwelcome trend which will probably continue. Thus, it is important to provide significant growth in engineering research at NSF as we do not want U.S. universities' engineering research to become solely mission oriented and DOD dominated.

The Engineering Division of NSF has programs in two broad areas, basic or disciplinary engineering research, and more targeted or cross-disciplinary engineering research. In FY 1989, 65 percent or $15.3M of the proposed $23.5M increase will be in the targeted or cross-disciplinary areas of engineering research. These include the Engineering Research Centers (ERCs), a proposed $7.03M increase or 30 percent of the total increase; the Emerging Engineering Technologies Division, a $2.85M increase or 12 percent of the total increase; the Critical Engineering Systems Division, a proposed $3.15M increase or 13.4 percent of the total increase; and the Design, Manufacturing, and Computer-Integrated

Engineering Division, a proposed $2.28 increase or 9.7 percent of the total increase.

The proposed increase for the basic engineering programs is $8.17M. The Chemical, Biochemical, and Thermal Engineering Division, a proposed increase of $3.0M or 12.8 percent of the total increase; the Mechanical Structures and Materials Engineering Division, a proposed $3.27M or 13.9 percent of the total increase; and the Electrical, Communications, and Systems Engineering Division, a proposed $1.9M or 8 percent of the total increase. It should be noted that even within these divisions, the largest increases are in the more focused or cross-disciplinary programs.

We are concerned that only modest increases are proposed for the basic engineering programs. If the same budgeting constraints prevail as in the last two years, the total request will be trimmed, and those portions of the program for which only modest increases were proposed will actually end up with a decrease. The soundness of the total program depends on a strong engineering science base. Historically, we have seen time and time again major programs suffer because of an inadequate engineering science base.

The technological advances of this century required a sound foundation in engineering science. Many of the R&D programs receiving strong emphasis now, within and outside NSF, as well as some NSF programs slated for increased emphasis in FY 1989, will not fare well unless they are backed up by increased emphasis on the relevant engineering science base.

For example, the Strategic Highway Research Program (SHRP), which is being carried out by the National Research Council under legislation passed by Congress last year, is an important program. Without it our huge investment in highways, which forms such a critical infrastructure for our whole way of life, would be in jeopardy. The program itself is aimed at short term solutions of some of the most critical problems. Somebody, presumably NSF, should be looking at the longer range solutions. In our judgement, these solutions cannot be achieved without strengthening the engineering science base critical to understanding. For instance, what are the factors that provide greater durability in reinforced concrete structures? How can we carry out meaningful non-destructive evaluation of these structures, and how can we develop better specifications in this area?

As another example, the only clearly identifiable support of the critical area of lifetime cost of products is the proposed increased emphasis on "computer modeling for life-cycle engineering." While this increase is laudable, it addresses only a very small element of the total need. Both the military and civilian economy are beginning to recognize the urgent need of strengthening the methodologies required to design for maintainability. These cover some sophisticated and complex technologies, from adaptive control to expert systems. The need for stronger research support in these areas is critical to national defense and to reestablishing our country's industrial competitiveness.

CONCLUSIONS AND RECOMMENDATIONS

We support the major priorities of the FY 1989 budget for the Engineering Directorate and endorse the Foundation's commitment to developing and sustaining a high level of federal support for both engineering research and education. Given the impact that engineering can have on U.S. economic competitiveness and the importance of NSF to many areas of basic and focused engineering research, we feel that it is, indeed, essential that Congress approve the proposed increase for FY 1989. These budget increases will help NSF balance its support for programs that foster economic vitality with those that ensure the long-term health of basic engineering research.

In the event that Congress finds it necessary to reduce the NSF request, we recommend that the first priority should be to provide meaningful increases to the basic engineering science programs. These programs are the ones that will provide the resources of intellectual talent for the next generation of innovative technological advances. For the most part, these areas have received no funding increases in the last three years. There is much catching up to do in these areas so that a proper balance can be restored between basic and targeted engineering research.

It is our hope that the Subcommittee will see the budget as an important investment in the nation's economic and industrial future, the rewards of which the nation will reap many times over.

Task Force on the National Science Foundation FY 1989 Budget

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STATEMENT OF THE AMERICAN SOCIETY FOR MICROBIOLOGY

The American Society for Microbiology (ASM) wishes to submit the following comments for the record concerning the fiscal year 1989 appropriation for the National Science Foundation (NSF). With an active membership of over 34,000, the ASM is the largest single biological life science organization in the world. Many ASM members are engaged in biological research and a sizable number are recipients of grants administered by the National Science Foundation. Areas represented in their interests include molecular genetics, biotechnology, photosynthesis, nitrogen fixation, regulation of gene expression, immunology and ecology.

As another budget cycle brings pressure on Congress once again to make difficult budgetary choices, the ASM believes it will be particularly important to safeguard the integrity of the kinds of intellectual activities that are fundamental to the character and success of this country. One such invaluable activity is basic scientific research. We believe that support of non-military, independent basic research is vital to preserving and enhancing our quality of life and our stature as a nation. In practical terms, basic research also provides the foundation for our international competitiveness.

To achieve these important ends, the ASM supports the Administration's proposal to double the budget of the National Science Foundation over the next 5 years and, as a start in this direction, to increase the NSF budget by $333 million or 19% for fiscal 1989. We believe that the relatively small amount of money proposed for all of NSF for fiscal 1989, $2.05 billion, brings disproportionately large returns through the support of vigorous research and education programs in the basic sciences.

We would like to emphasize that the NSF budget for research and related activities has experienced no real growth for the last three years, which has a serious impact when you consider that our international competitors are challenging as never before U.S. preeminence in science and technology. NSF research and related programs experienced a particularly deep cut in fiscal 1988, increasing by only 3.3% instead of the 17% originally envisioned by the Administration. For fiscal 1989, the Administration has proposed a 10% increase for research and related activities, raising this category from $1.453 billion in fiscal 1988 to $1.603 billion in fiscal 1989. To permit some growth, instead of standing still or even losing ground, we believe the proposed amount of $1.603 billion for fiscal 1989 is reasonable even in the face of serious national budgetary stringencies. The NSF is one of the few government agencies responsible for generating new scientific knowledge, providing this country with the tools needed to compete aggressively with other nations in the arena of scientific discoveries and their applications in agriculture, industry and for a better environment. We cannot afford to slight this important part of our national effort.

Sixty-five percent of the research and related activities category constitutes support for individual investigator-initiated research. This mechanism to foster small, intense, independent research effort is the backbone of productive scientific endeavor in this country. To maintain and increase our scientific knowledge, this is the category of support to the scientific community that must not be harmed inadvertently because of budgetary pressures and the very real need to find places to economize.

We endorse increases for categories within the NSF budget that affect basic research in the biological sciences, including growth in graduate student and post-doctoral fellowships and an increase in the Presidential Young Investigator Awards. Available data indicate a shortage of certain types of biological scientists and support predictions of greater shortages in certain fields in the near future. It is essential to train additional individuals in the biological sciences to take advantage of the current expansion of research opportunities. A modest increase of 8.6% is recommended to support research within the Biological, Behavioral and Social Sciences Directorate (BBS). In view of the low level of increase between fiscal 1987 and fiscal 1988 of only 2.6% for BBS programs, we strongly recommend that Congress approve the 8.6% increase for fiscal 1989.

Within the BBS Directorate, programs in such forefront areas as Cellular Biosciences, Molecular Biosciences and Biotic Systems are slated for fiscal 1989 increases of 6.3%, 8.3% and 10.7%, respectively. Since these important programs received increases in the previous year, from fiscal 1987 to fiscal 1988, of only 0.7%, 1.1% and 1.2%, respectively, we believe the current request is barely sufficient to keep these vital areas of biological research active and healthy (see Table 1). The BBS supports a significant amount of the research done in the U.S. on basic mechanisms of cells and the molecular basis of life and about 90% of the basic environmental biology research at colleges and universities. The NSF biological sciences program has contributed to our understanding of the structure, function and regulation of genes and the use of gene transfer techniques for the potential improvement of economically important plants. The NSF's role in supporting fundamental research in microbiology and molecular biology is crucial to the development of biotechnology.

Trends concerning the numbers of individual grants funded and the sizes of the average grant in dollars show that in NSF research and related areas, the numbers of grants have increased only slowly, and their average size has barely kept up with inflation. The growth from fiscal 1987 of 14,217 awards to fiscal 1988 of 14,387 was only a 1% increase. For fiscal 1989, an increase of 5.9% is requested, to a total of 15,287 awards (see Table 2). This plan seems reasonable and far from extravagant.

With respect to the size of the average award, the growth from fiscal 1987 of $99,200 to the fiscal 1988 estimated figure of $101,100 represents less than a 2% increase. For fiscal 1989, an increase of only 3.7% to $104,800 is requested, which is clearly a modest proposal that will not even keep pace with general inflation. The relatively small size of NSF grants, which has been further eroded in recent years because of budget constraints, has failed to keep pace with the current high costs of doing research, and has come close to being a self-defeating economy. We believe the changes recommended for fiscal 1989, even though very small, will begin to improve the buying power of the NSF grants that are awarded.

We continue to emphasize that the average grant in the biological sciences funded by NSF supports limited personnel and supplies and leaves little funding for the acquisition or replacement of relatively low-cost instrumentation, which is essential to modern research in the biological sciences. At their present level of funding, between $69,000-$82,000, grants awarded by BBS are below the level necessary to maintain an efficient program of research. We would also like to point out that even under the proposed fiscal 1989 increase for BBS, the number of grants awarded in the molecular and cellular biosciences will fall below the number awarded in fiscal 1987. We believe that the NSF biological sciences budget would benefit from additional funding to allow for an increase in both the number and size of grants awarded.

One of the primary strengths of the NSF is its ability to catalyze fruitful interactions between disciplines. With both physical and biological disciplines under the same roof, important interdisciplinary enterprises like the Global Sciences Geosciences Program can be formulated and supported through the joint efforts of two Directorates at NSF, the Biological

Behavioral and Social Sciences Directorate together with the Directorate for Geosciences. This approach to problems of vast scale, of developing a global, interdisciplinary long-range view of how to manage mankind's impact on this planet, seems likely to be much more valuable and effective than studies within single disciplines. We believe that the integrated approach fostered by NSF should be supported.

Integration is also envisioned for the new Science and Technology Centers, where an effort is being made to encourage interdisciplinary interaction and to effect economies in the escalating costs of instrumentation by simplifying and expediting a system of sharing major pieces of expensive equipment. Inter-institutional cooperation would be fostered by this approach. We support the effort to address the need for university-based multidisciplinary, multi-investigator research, but we again stress that without substantial growth in the NSF budget in the near future, the proposed new science centers could absorb an increasing share of NSF resources and compete with individual investigator initiated research grants for scarce research dollars. We emphasize that increased NSF funding will be necessary for the establishment of multidisciplinary centers.

Another major thrust at NSF is education. America needs more and better scientists. Much of the rest of the developed world has caught up with us and is passing us by. We need a steady stream of young, well-trained scientists to maintain our position in the world. To accomplish this, we need to support high quality education and training all the way from kindergarten through post-doctoral years. The NSF is the one federal agency that supports efforts to provide excellence in scientific training programs at all levels of a young person's education. We need to continue programs of this kind.

The NSF is a unique agency in more than one way. It is surprisingly small in view of its impact in supporting many different kinds of productive programs, many of them catalytic in nature. With relatively small outlays of money, the programs at NSF encourage individual basic research projects, create interdisciplinary interactions, and strive to increase both the quality and quantity of young scientists and engineers. All of this is accomplished with an extraordarily small budget relative to other similar government programs. The total request for NSF is only 2.6% of all federal R&D expenditures. The NSF gives a lot in return for every dollar of expenditure. In our view, the money is extremely well spent and the increment requested in the Administration's budget will allow the agency to break out of the plateau it has been on, and to proceed to do more of what it does so well.

Thank you for the opportunity to comment and members of the ASM would be pleased to work with the Subcommittee throughout the appropriations process.

STATEMENT OF THE AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES

The American Institute of Biological Sciences (AIBS) is a federation of 40 professional societies and research laboratories representing over 70,000 life scientists who are integrally concerned about the course of science research and education in America. We are pleased to take this opportunity to voice our enthusiastic support for the President's budget request for the National Science Foundation, (NSF), for FY 89.

As you know, the President's budget requests a total of $2.050 billion, an increase of 19 percent over last year. Of this amount, $1.603 billion would support research and development--the cornerstone of NSF's activities. The Foundation's budget will be devoted to three major areas: Education and Human Resources; Science and Technology Centers and Groups; and Basic Disciplinary Programs. We believe that these three areas of emphasis will provide a sound framework for our renewed national commitment to science research and education.

For some time we have been concerned about science education both at the undergraduate and graduate levels in this country. Last year's report by the White House Science Council, the National Science Board and the American Council on Education confirmed serious problems with the quality and size of the talent pool, the very people we will be depending on to keep the United States a competitive leader on the world scene in the years ahead. We applaud the action taken by the U.S. Congress in FY 88 to increase science and engineering education by 40 percent. We believe that the renewed emphasis in federal support for science education through the NSF will help to reverse the downward trend of years past. The Foundation's FY 89 budget provides a total of $156 million in education and human resources. These funds will be used both to increase on going efforts and to initiate a set of new activities aimed at certain strategic points in the educational sequence and in professional development.

It has become obvious to the scientific community that better efforts must be made at the pre-college level in order to interest talented students in science careers. For FY 89, about $108 million will be invested by NSF in pre-college activities including efforts for improved teaching, enrichment activities for talented high school studies and special opportunities for "hands-on" research. We firmly feel that these investments are absolutely critical in order to encourage interest in science and science careers at the earliest age possible.

The National Science Board has documented the overwhelming need for improvement in the quality of undergraduate education. Under the proposed request, NSF will increase its support for this segment to $65 million. We believe that planned expansion in areas such as student research participation, faculty enhancement and laboratory instruction is a sound investment in the future.

At the graduate and post-doctoral levels, NSF plans to place emphasis on support for interdisciplinary training opportunities. For FY 89, graduate fellowships will be increased by 100 new offers bringing the total of new offers to 860. Since the principal professional training of our Nation's scientists is achieved through these mechanisms, we heartily support this proposed course. We all agree that the availability of well-trained scientists is essential to a healthy, growing economy. For this reason, we urge you to support the education activities proposed by NSF under its FY 89 plan.

The area of our most specific concern is federal support for programs in the life sciences. A word about the research budget of the Biological Behavioral and Social Sciences (BBS) directorate is therefore appropriate. The request for the BSS is $288.7 million, an increase of just over 8.6 percent over the 1988 current estimate.

Sub-activities within the BBS show the following increases: Molecular Biosciences would increase by 8.4 percent bringing its total to $48.3 million ($3.7 million more than the FY 88 current estimate); Cellular biosciences would increase by 6.2 percent bringing its total to $57.6 million ($3.4 million more than the FY 88 current estimate); and Biotic systems and resources would increase by 10.6 percent bringing its total to $65.3 million ($6.2 million more than the FY 88 current estimate).

NSF's priorities for biology include $5.0 million of increased support for biotechnology, emphasizing basic research in genetics and molecular structure. More multidisciplinary research on biological communications focusing on how signals are received and processed within and between organisms. Continued support for research on global ecosystems dynamics with special attention to land sea interactions. Additional Long-Term Ecological Research (LTER) sites with computer networking among sites to promote synthesis of regional data for models of the biosphere. Studies on the effects of human actions on global change would be supported as part of NSF's active participation in the International Geosphere Biosphere Program. Over $5.0 million in additional funds are planned for efforts related to global geoscience. This area of inquiry is of critical importance because ecosystems rapidly change in response to human-caused and other pressures. The changes have far-reaching consequences including impact on commercial development of certain species of plants and microorganisms--for use directly by humans for food (such as disease-resistant crop strains), drugs, and chemical compounds; and indirectly, through genetic applications and chemical transformations.

Support would be maintained for plant science centers, with an increase of $4.0 million planned for instrumentation, research facilities and data bases. Research on the biological basis of behavior will be strengthened particularly for studies on the neurobiology of learning, memory and information utilization. NSF also will strengthen its postdoctoral fellowship programs in areas such as plant sciences, environmental biology, and political economy.

We strongly support these areas of support for the life sciences and urge you to support the President's proposed funding increases for the BBS and its subactivities. Sound investment in these areas will support advances in disciplines ranging from agriculture to medicine in the near future. In turn, such applications directly influence our nation's ability to compete on the world market.

The Administration's proposal for significant growth in federal funding for NSF extends beyond FY 89, culminating in a doubling of the Foundation's budget in five years. We heartily support this commitment as well. Already NSF is exploring programs which will carry these budgetary themes beyond this year. Such an approach is necessary if short-term gains are to be converted into long-term benefits. AIBS urges you to support the President's budget request for NSF, as an appropriate investment in our Nation's future. We believe that the initiative to strengthen basic research and science education as a means of increasing our technological superiority and bolstering economic competitiveness is a sound one, and worthy of your active support.

AIBS hopes that you will feel free to call upon the Institute if we can provide you with more specific details on this matter of national importance.

STATEMENT OF THE COALITION FOR NATIONAL SCIENCE FUNDING

The Coalition for National Science Funding (CNSF) is a broadly based coalition united by a commitment to sustained investment in the nation's scientific and engineering enterprise. Members include scientific, engineering, and professional societies, higher education associations, independent research institutes, and other organizations.

For the United States to remain secure and economically strong, we must invest systematically in the education of our people and the creation of new knowledge. Accordingly, CNSF calls on the federal government to launch a new national investment strategy designed to strengthen substantially research and education in this country. CNSF urges the government to adopt the following goals and take these action steps:

Goals

- keep the nation a world leader in research and education,
- foster technological innovation and increase productivity,
- encourage scientific and technological literacy among all citizens.

Action Steps

- promote private and public investment in research and education at all levels;
- invest in quality undergraduate and graduate programs to ensure an adequate supply of educated people and the generation of new knowledge essential to government, education, and the private sector;
- strengthen investment in mathematics and science instruction in elementary and secondary schools;
- invest in civilian research, encourage collaboration between academe and industry, and promote timely transfer of research results from federally-supported research programs to the private sector;
- foster open international exchange and cooperation in science and technology;
- strike an appropriate balance among federal investments to meet the research needs of government and the civilian sector;
- join with state governments, colleges and universities, and the private sector in rejuvenating research and instructional equipment and facilities;
- expand national investment in academic research and education at all levels, especially by strengthening the research and education programs of the National Science Foundation;
- **CNSF urges Congress to fund the National Science Foundation at the level of the budget request.**

The Coalition for National Science Funding (CNSF) is a broadly based coalition of more than 50 scientific, engineering and professional societies, higher education associations, independent research institutes, and other organizations. We are united by a commitment to sustained investment in the nation's scientific and engineering enterprise. CNSF members call on Congress to respond to the unprecedented scientific, technological, and economic challenges facing the United States by strengthening investment in the nation's research and education base. The scientific and engineering research and education programs of the National Science Foundation are unique and vital investments. We, therefore, urge Congress to support the Foundation's FY 1989 budget request and to initiate an academic facililities modernization program in NSF.

PARTICIPATING ORGANIZATIONS

American Institute of Aeronautics and Astronautics
American Association For Clinical Chemistry
American Association of Community and Junior Colleges
American Association of Engineering Societies
American Association of State Colleges and Universities
* American Chemical Society
American Consulting Engineers Council
American Council on Education
American Educational Research Association
* American Electronics Association
* American Geological Institute
American Institute of Biological Sciences
American Institute of Chemical Engineers
American Institute of Physics
* American Physical Society
American Political Science Association
American Psychological Association
American Society for Biochemistry and Molecular Biology
* American Society for Engineering Education
* American Society for Microbiology
American Society for Quality Control
American Society of Mechanical Engineers/Council on Education
American Society of Safety Engineers
ASM INTERNATIONAL™
Association for Affiliated College and University Offices
Association of American Geographers
* Association of American Universities

Association of Independent Research Institutes
Association of Systematic Collections
College-University Resource Institute, Inc.
* Consortium of Social Science Associations
* CORETECH-Council on Research and Technology
Council of Graduate Schools
Council of Scientific Society Presidents
Council on Competitiveness
* Delegation for Basic Biomedical Research
* Federation of Behavioral, Psychological and Cognitive Sciences
Federations of American Societies for Experimental Biology
Industrial Biotechnology Association
* Industrial Research Institute
* Institute of Electrical and Electronics Engineers, Inc.
Joint Oceanographic Institutions, Inc.
Linguistic Society of America
Long Island Forum for Technology, Inc.
National Association of Biology Teachers
National Association of Geology Teachers
* National Association of State Universities and Land-Grant Colleges
* National Society of Professional Engineers
Society of Nuclear Medicine
Society of Women Engineers
System Safety Society
The Association of Engineering Firms Practicing In The Geosciences
The Society for Neuroscience
Universities Research Association

* Participant of CNSF Steering Committee

CORPORATE AFFILIATES

Association of Biotechnology Companies
Battelle
Cetus Corporation
Raychem Corporation

- May 9, 1988

The Return on Investment in Basic Science and Engineering

The nation's investment in basic science, engineering, and education since World War II has yielded unprecedented knowledge. This, in turn, has fostered technological innovation, economic development, improved health care, and a strong national defense. Some examples:

- materials research has produced such revolutionary advances as ***transistor microelectronics*** and the ***use of optical fibers in communications***;
- scientists have discovered a unique free living bacterium that mobilizes nitrogen from the air and so acts as a natural ***living fertilizer***;
- the ***spellchecker*** feature of computer-based word processing systems grew out of basic research in computational linguistics;
- the first ***automated DNA sequencing machine*** will help researchers find the underlying basis of cancer and hereditary diseases and accelerate research at the molecular-level;
- the structure of a ***common cold virus*** was determined rapidly through use of a supercomputer, paving the way for the future development of vaccines for colds and other ailments;
- the discovery of a new chemical process that ***destroys*** polychlorinated hydrocarbons, such as ***PCBs***, could help clean-up the environment;
- research in ***geographic information systems*** is equipping municipal governments with improved planning techniques for roads, sewer systems, flood plains, and housing developments;
- research on the linguistic structure of sign language led to the development of a dictionary of ***American sign language*** and the incorporation of sign language as a means of communication in American life;
- researchers have successfully transferred a gene that codes for light production in fireflies into a ***plant's genetic material***. This valuable research tool promises new knowledge about plant development leading to more productive, nutritious, and disease-resistant crops;
- basic economic research has led to the development of such ***management tools*** as input/output analysis, new quality and inventory control methods, and production and sales forecasting;
- researchers have developed the first microscaled machines on silicon chips. One day surgeons will perform delicate operations using ***microscopic machines***, while microrobots may be sent on interplanetary voyages or into inaccessible hazardous areas;
- engineers are developing a ***walker*** that could provide the electrical stimulation needed by leg muscles. Functioning like an ***artificial nervous system***, the walker could provide new mobility for people with irreparable nerve damage;
- a ***new molecular sieve*** could squeeze more gasoline out of a barrel of crude oil and revolutionize the petroleum processing industry;
- recent research breakthroughs in ***superconducting materials*** suggest a vast array of applications such as levitated trains; more efficient and cheaper electric power; and new technologies for the workplace, home, and hospital;
- research in polymers is revealing how cracks in certain ***materials*** (rubber, plastics) can ***heal themselves***;
- new materials are being developed using ion implantation techniques that will ***reduce wear of surgical bone implants*** by a factor of 400;
- the ***PET scan*** (Positron Emission Tomography) is transforming the study of the function of organs, such as the brain, with implications for improved health care;
- research in artificial photosynthesis and solar energy storage is ***harvesting light to convert to electrical energy*** from complex synthetic systems.

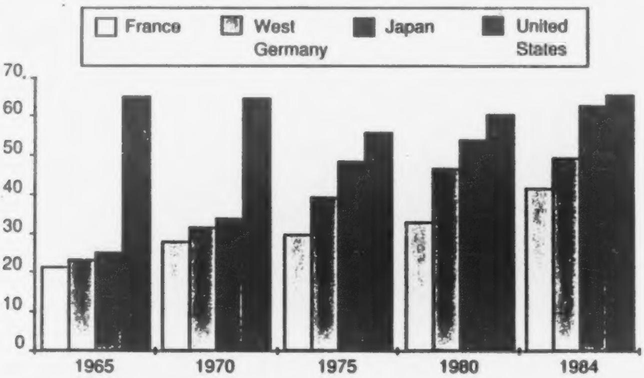
An Eroding Lead

> *No nation can maintain a position of leadership in the world of today unless it develops to the full, its scientific and technological resources.*
> *(Harry S Truman)*

> *The case for investing in talent and knowledge as the basis for a strong economy is compelling – an issue around which all individuals and interest groups can join.*
> *(National Science Board, 1988)*

U.S. achievement in science and engineering in recent decades has been second to none. The system remains strong, but we can no longer take our preeminence for granted. Not since the dawn of the space age have our research and education systems been so subject to international competition and internal stresses. The nation's position in science and engineering is jeopardized by weakened commitment to investment in key fields, inadequate numbers of U.S. citizens pursuing advanced degrees in science and engineering, outdated research facilities and equipment, and unprecedented global competition in research, education, and the application of new knowledge. Evidence that we are losing ground includes our trade deficit, especially in high-technology products; nondefense R&D spending as a percentage of Gross National Product; the percentage of U.S. patents granted to residents of foreign countries; and the fraction of our population engaged in research and development.

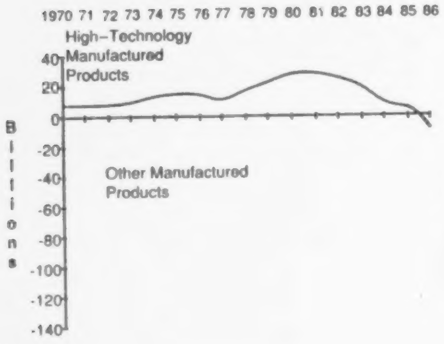
A Shrinking U.S. Lead:
Research and Development Scientists and Engineers per 10,000 Workers



The fraction of the U.S. population engaged in science and engineering, more than double that of any other country in 1965, has remained nearly constant, while in Japan and West Germany it has nearly tripled in the same period.

Source: NSF

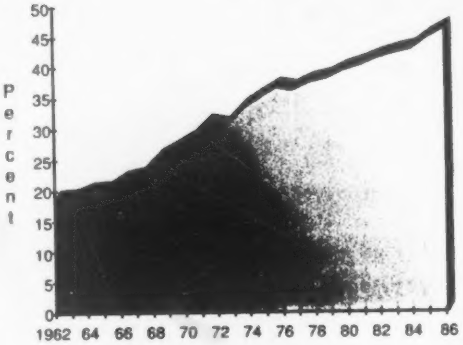
U.S. Becomes Net Importer of High Technology Products



The U.S. trade balance in high technology products was negative for the first time in 1986.

Source: NSF

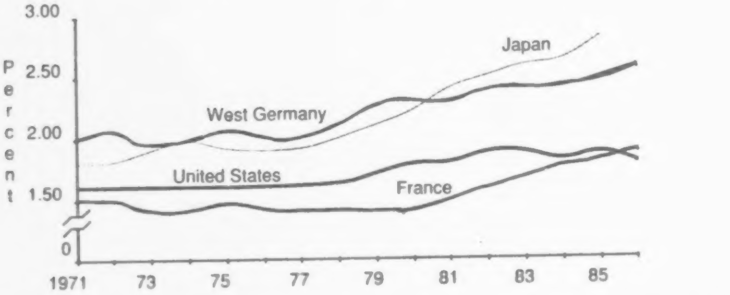
A Measure of a Decline in U.S. Inventiveness and Competitiveness: Percentage of U.S. Patents Granted to Residents of Foreign Countries: 1963-1986



The percentage of U.S. patents granted to residents of foreign countries has increased from 19% in 1963 to 45% in 1986.

Source: U.S. Department of Commerce

U.S. Trails West Germany, Japan and France in Non-Defense R&D Expenditures as a Percentage of GNP

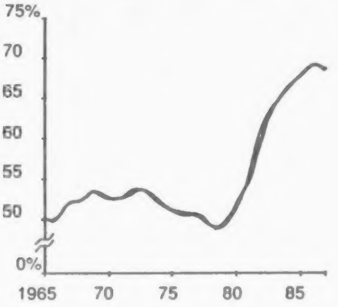


For 15 years, U.S. investment in civilian R&D as a percentage of GNP has lagged far behind that of West Germany and Japan, and the difference is growing. France has now passed the U.S.

Source: NSF

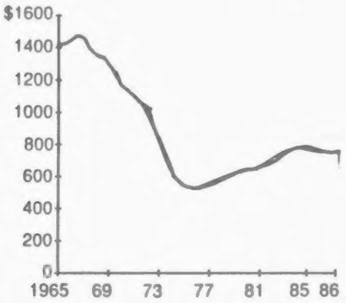
Profile of Federal R&D

Military R&D as a Proportion of All Federal R&D



Source: OMB

Federal Funding for Defense Basic Research



Constant 1982 Dollars (Millions)

Includes DOE's defense related activities.

Source: NSF

Total R&D

Spending for research and development in the United States totalled $123 billion in 1987.

More than two-thirds of national R&D spending, $82 billion, is for development and about one-third, $41 billion, is for basic and applied research. About half of total R&D is supported by the federal government and about half by industry.

Federally Funded R&D

Much of the nation's R&D growth in the current decade has been fueled by federally-funded defense spending, which has climbed by 160% over this period, a 92% increase in constant dollars. In fact, increases in defense R&D have accounted for 90% of the growth in federal R&D spending since 1980. As a result, defense now represents 70% of the federal R&D budget, up from 50% in 1980. However, DOD support of its basic research programs, in constant dollars, has declined.

In contrast to defense, federal funding for non-defense R&D has risen by only 28% since 1980, a 14% reduction when adjusted for inflation.

Basic Research

The primary source of basic research funding in the U.S. is the federal government, providing about two-thirds of the $15 billion total. Industry supports another $3 billion, universities $1.6 billion, and other sources about $700 million.

Colleges and universities perform more than half the nation's basic research. Industry conducts about 20% of the total. The federal government and other non-profit institutions account for the rest.

The individual investigator-initiated research grant has been the backbone of the U.S. scientific enterprise and the source of much of our economic strength since World War II.

Needed: Increased Investment in People

An effective system of science and engineering education is vital to the long-term interests of the United States. U.S. prosperity and security depend on enough well-trained scientists and engineers to respond to national needs. How are we doing?

- Among industrialized nations, the U.S. awards the smallest proportion of first university degrees in science and engineering.
- Between 1970 and 1985, the number of engineering doctorates awarded to U.S. citizens declined nearly 50%, dropping from 2,514 to 1,279.
- Traditional college-age population in the U.S. (18-22) peaked in 1983. It will continue to decline through 1996 and then hold steady until 2005. **To maintain present numbers of undergraduate degrees awarded in science and engineering, we may have to attract as many as 50% more college entrants to those fields.**
- Women make up 50% of all college graduates and 38% of the science and engineering baccalaureate recipients, but are just 25% of S&E doctoral recipients. Women earn 16% of Ph.D.s in physical sciences, 15% in mathematics and 6% in engineering.
- Blacks and Hispanics comprise about 20% of the total U.S. population, but account for less than 2% of doctoral degrees in science and engineering. By 2020, these groups will make up one-third of the U.S. population. In 1986, the total number of engineering doctorates awarded in the U.S. was 3,376, of which 24 went to blacks; in the physical sciences, blacks earned only 33 of the 4,408 Ph.D.s.
- Because we are failing to attract a sufficient number of U.S. citizens into **graduate programs**, U.S. universities increasingly rely on foreign students to fill science and engineering classes.
- Between 1980 and 1987, federal support of graduate engineering and science students fell by 3%, mostly from reductions in traineeships and teaching assistantships. Recent changes in the tax code have aggravated the problem. In response, financial support has been diverted from vitally needed programs to cover this shortfall in student support.
- Our failure to attract more of the nation's youth to careers in science and engineering can be traced to the low quality of pre-college education in science and mathematics. Almost one-third of all science and mathematics teachers in secondary schools are unqualified to teach those subjects.

How Do We Rank? Student Achievement in Science

	Grade 4/5	Grade 8/9	Grade 12/13		
	Age 10	Age 14	Biology	Chem.	Physics
Australia	9	10	9	6	8
Canada*	6	4	11	12	11
England	12	11	2	2	2
Finland	3	5	7	13	12
Hong Kong	13	16	5	1	1
Hungary	5	1	3	5	3
Italy	7	11	12	10	13
Japan	1	2	10	4	4
Korea	1	7	–	–	–
Netherlands	–	3	–	–	–
Norway	10	9	6	8	6
Philippines	15	17	–	–	–
Poland	11	7	4	7	7
Singapore	13	14	1	3	5
Sweden	4	6	8	9	10
Thailand	–	14	–	–	–
USA	**8**	**14**	**13**	**11**	**9**
Participating Ctry	15	17	13	13	13

*English Speaking Canada

Source: International Association for the Evaluation of Educational Achievement, 1988.

A 1988 report ranking science achievement among elementary and secondary students in 17 countries shows that U.S. 10-year-olds rank eighth and 14-year-olds 14th. Among the 13 countries that also tested high school students, U.S. 12th graders ranked ninth in physics, 11th in chemistry, and 13th in biology.

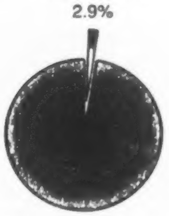
NSF: A Unique Agency

Founded in 1950, the National Science Foundation (NSF) has a unique role in advancing the scientific and engineering enterprise. NSF has primary responsibility for funding research at the cutting edge and maintaining the health and development of all scientific and engineering disciplines. Moreover, NSF research and education programs lead the way in federal efforts to attract and train a sufficient number of able students as scientists and engineers, and provide a base of scientific understanding for all citizens. Foundation programs are upgrading mathematics and science instruction in elementary and secondary schools. NSF is also helping to foster scientific and technological literacy at all levels.

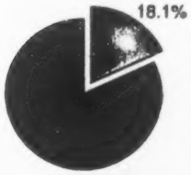
Research

The National Science Foundation is the only federal agency whose mission is to support basic research. In some disciplines, NSF provides the only federal source of support. Despite its critical role, however, NSF's budget for research and related activities has remained flat in real terms for the past three years.

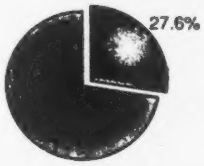
NSF Share of Total Federal R&D



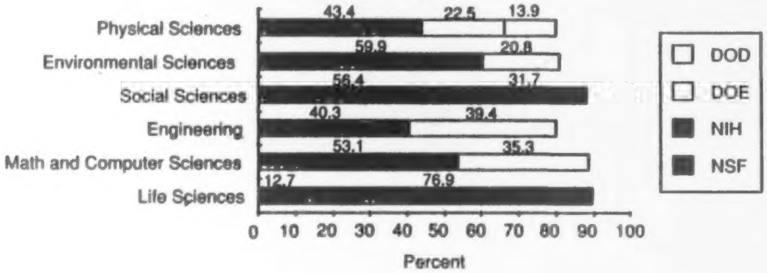
NSF Share of Total Federal Basic Research



NSF Share of Basic Research in Colleges and Universities



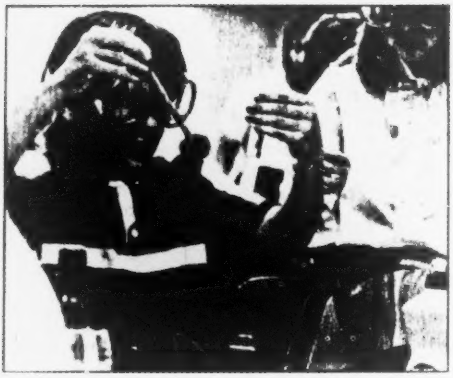
NSF Accounts for the Major Portion of Federally Supported Academic Basic Research FY 1987



Source: NSF

NSF Education Programs

NSF supports education programs at all levels.



Precollege Education

- NSF supports two national television mathematics and science programs for young students, *3-2-1 Contact* and *Square One*. These provide children with an hour a day of math and science instructional programming.
- The Comprehensive Mathematics Project is testing an improved K through 12 mathematics program in South Chicago schools.
- ChemCom (Chemistry in the Community) is the first high school chemistry course aimed at the majority of students who do not intend to pursue science as a career. Nearly 20,000 students have successfully tested the course.

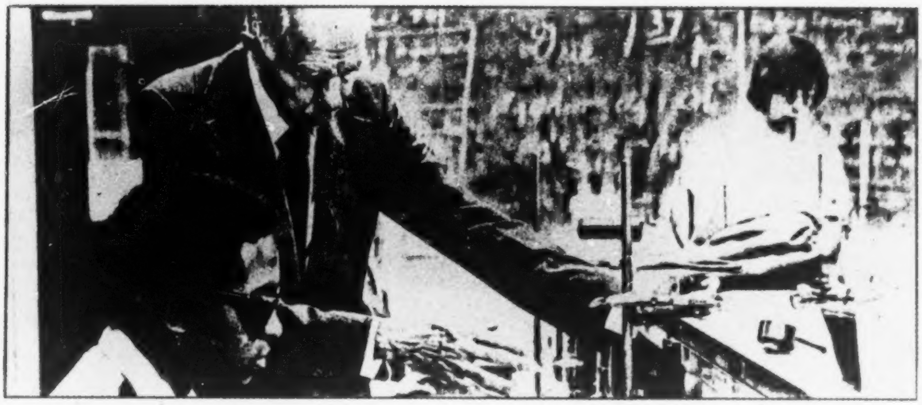
Source: University of Alabama

Undergraduate Education

- In the early 1960s, two university mathematicians developed BASIC, a computer language used world wide in education.
- The Undergraduate Mathematics Applications Project (UMAP) created a national network of mathematics faculty who developed, tested, and put in use 400 instructional modules on modern applications in mathematics.
- Project AMCEE (Association for Media-based Continuing Education for Engineers) is a successful, self-sustaining, continuing engineering education program widely used by universities and industries.

Graduate Education

- Over three-fourths of graduate student fellowships, traineeships, and training grants in science and engineering are funded by NSF and one other agency.
- FY 1989 will mark the 25,000th graduate fellowship awarded by NSF since the program began in 1952.
- Recipients of NSF graduate fellowships over the years have received ten Nobel prizes, six John Charles Fields medals for excellence in mathematics, and six Alan T. Waterman awards, the Foundation's prestigious award for young researchers.

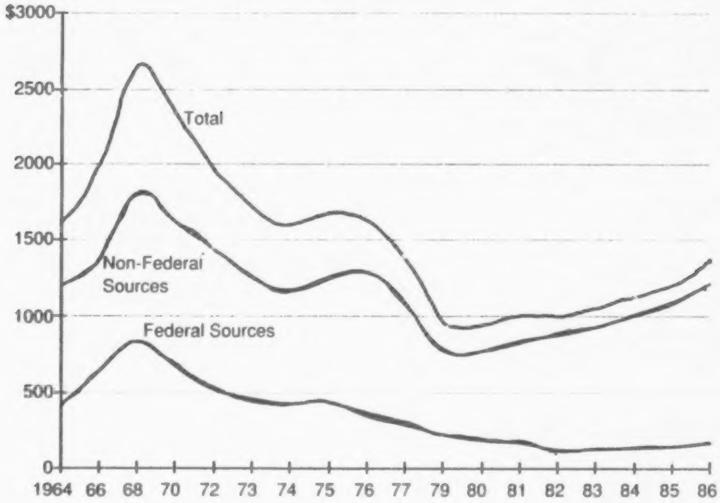


Nobel Prize Winner Glenn T. Seaborg

Infrastructure: An Unrecognized Need

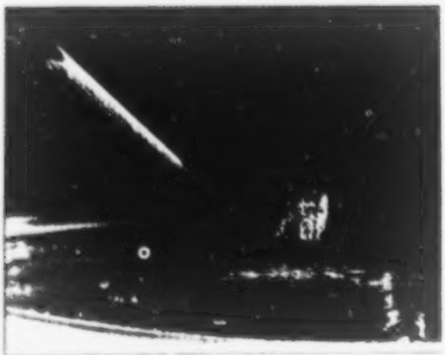
Perhaps the most serious unmet need of the research enterprise is the modernization of university research and instructional facilities. Federal investment in academic and other non-profit research facilities and equipment has declined steadily for two decades – a fact not widely recognized. A recent survey found that one out of three federal officials and journalists believes federal funding of university research facilities has increased. Meanwhile, the nature of doing research at the frontiers of science has been revolutionized, causing costs to increase dramatically. Microelectronics research, for example, requires clean rooms with air 100,000 times as pure as normal rooms, and floors virtually free from vibration. Modern chemistry and biology research require special ventilation and waste disposal facilities.

Investment In Research Facilities Declines
(Millions)



Source: NSF

THE PROMISE OF FUTURE INVESTMENT



Superconductivity demonstration

Source: Carnegie Mellon University / Bill Redic

Superconductivity

The discovery of a new family of superconductive materials offers prospects of higher speed computers and more sensitive detectors, and for transmitting power over very long distances and designing extremely efficient motors and generators.

Firefly gene transferred into tobacco plant

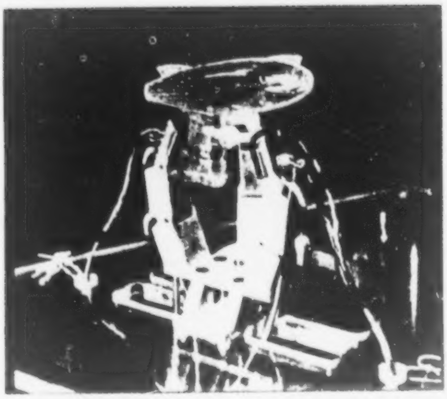
The firefly gene promises to be an extremely valuable research tool for tracing gene expression within living systems, for learning about plant development, and for genetic engineering plants.

Structural Biology

New x-ray diffraction and nuclear magnetic resonance instruments, linked with very fast computers and computer-graphic displays with unprecedented resolution, are helping to unravel protein structure. Dramatic advances in our understanding of the processes of biological control are under way.

Ceramic Materials

Using new techniques, engineers and scientists are designing materials with unique electrical, optical, mechanical, and chemical properties with applications in electronics, transportation, computers, manufacturing, and communications. High-performance ceramics utilize plentiful and non-hazardous resources.



Robotics

Automobile manufacturing

Source: University of Alabama

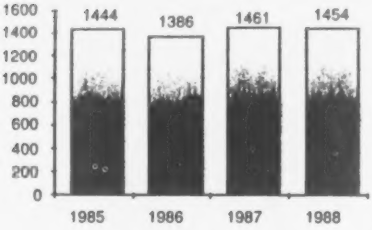
NATIONAL SCIENCE FOUNDATION
FY 1989 BUDGET REQUEST

CNSF urges Congress to adopt three goals as a new national investment strategy for research and education:

- keep the nation a world leader in research and education,
- foster technological innovation and increase productivity,
- encourage scientific and technological literacy at all levels.

As the next step toward achieving these goals, CNSF urges Congress to approve the FY 1989 Budget request of the National Science Foundation.

Research and Related Activities 1985-1988



Constant FY 1988 Dollars (Millions)

Source: NSF

Research & Related Activities

- Funding for Research and Related Activities has been flat in real terms (constant dollars) since FY 1985.
- After several years of progress, NSF support for instrumentation is decreasing. For example, funding for the instrumentation program in Materials is below FY 1987 levels, and Chemistry is at the FY 1983 level.
- Balanced investment in individual investigator-initiated research grants, and group and specialized center awards is critical to ensure that significant advances in scientific knowledge continue.
- A new undergraduate program, funded largely through the research directorates, focuses on curriculum revitalization, faculty development, student research participation and laboratory development. In FY 1989 an expansion of the program from $40 million to $65 million is proposed.
- **CNSF urges Congress to fund NSF core research programs at the level of the budget request, a 10% increase.**

Science and Engineering Education

- Although NSF supported a number of undergraduate education programs in the 1960s and 1970s, they were cut back severely in the early 1980s and only now are being rebuilt.
- Funding is increased for pre-college science and mathematics education, including teacher preparation and enhancement, materials development, and informal science education.
- A total of 860 Graduate Fellowships for U.S. citizens will be made.
- Funding will expand participation of women, minorities, and disabled persons in science and engineering careers.
- **CNSF supports the requested 12% increase for education in FY 1989.**

U.S. Antarctic Program

- Funding levels requested will permit continued research on depletion of the atmospheric ozone shield, and expansion of biological and environmental research projects.
- **CNSF supports the 13% increase requested for the U.S. Antarctic Program.**

Science and Technology Research Centers

- The request would create 15 Science and Technology Research Centers, and fully fund them for 4 to 5 years to exploit new opportunities in science and technology.
- NSF planned to start this program in FY 88, but was unable to do so because of the budget situation. NSF has in hand 325 proposals from 122 institutions located in 42 states.
- **CNSF supports the request and urges Congress to endorse NSF's plan to fully fund newly established centers.**

	FY 1988 Request	FY 1988 Appropriation	FY1989 Request	Percent Increase Over FY 88 Appropriation
		(Millions)		
Research & Related Activities	$1,635	$1,453	$1,603	10%
Science & Engineering Education	115	139	156	12%
U.S. Antarctic Program	143	125	141	13%
Science & Technology Centers	-	-	$150	-
Total	$1,893	$1,717	$2,050	19%

Infrastructure: The Most Serious Unmet Need

- Obsolete facilities seriously hinder efforts to improve the productivity and competitiveness of our research and education enterprise. The 1986 report by the White House Science Council estimates that the federal government, states, and universities need to invest $10 billion over the next ten years for university infrastructure.
- **The CNSF urges Congress to create a substantial facilities modernization program in the NSF. It is time for the federal government to rejoin the partnership.**

STATEMENT OF THE TASK FORCE OF AMERICAN SOCIETY FOR ENGINEERING EDUCATION, NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

We appreciate this opportunity to share our views on the National Science Foundation budget for Fiscal Year 1989. This statement is being submitted for the record by the Engineering Education Task Force, a multi-society group working together to address major issues in engineering research and education. Member organizations are the American Society for Engineering Education (ASEE) and its Engineering Deans Council, the National Society of Professional Engineers (NSPE) and the National Association of State Universities and Land Grant Colleges (NASULGC).

ASEE is a membership society of more than 10,000 individual members as well as schools of engineering and engineering technology and engineering-oriented industrial companies. NSPE is a professional society representing 75,000 professional engineers in industry, construction, private practice, government, and education. NASULGC is a higher education association whose member public colleges and universities educate more than two million of the nation's students each year.

The Engineering Education Task Force believes the increases in education and engineering research proposed in the FY 1989 NSF budget are inadequate; the need is considerably greater. As our economic competitiveness and quality of life become increasingly dependent on technological advancement, we must strengthen our investment in technological education and research. It is the high quality education and research achievements of young engineers and scientists today that will lead the nation into the high technology future of the 21st century. Moreover, with technology tightly linked to political and economic decisions, our nation's citizens must achieve greater technological literacy.

The National Science Foundation's role in this effort is not only to support basic research and education, but to provide national leadership and leverage resources from industry, state and local governments and academic institutions in addressing these challenges.

ENGINEERING RESEARCH. Members of the task force believe that engineering research in NSF historically has been underfunded. The proposed increase for FY 1989 fails to continue the previously proposed and broadly supported plan to correct this deficiency. A request for the engineering directorate of $10 million less than last year's request is not persuasive evidence of commitment to this goal.

The inadequacy of the proposed funding is illustrated in the NSF's Engineering Research Centers (ERC) program. The academic and industrial communities have overwhelmingly proved they are capable of working together in industrially-relevant research, updating engineering curricula and transferring technology from engineering schools to cooperating industrial companies.

Rather than recognizing the successes of this experiment in academic engineering research and education, NSF has slowed development considerably. Two new centers for FY 1988 have yet to be designated and the Foundation is proposing only two new centers for FY 1989. This total of 18 centers is well below the 25 centers recommended in the original National Academy of Engineering proposal. This is particularly unfortunate in light of the fact there are superb technical proposals that are not being funded.

THE STUDENT PIPELINE. We would like to focus our remarks on the greatest long-term challenge to engineering education: the student pipeline. As you know, between now and the 21st century, the nation's college age population will drop by 25% and become increasingly Black and Hispanic, groups which have traditionally been underrepresented among engineering students. This demographic fact is particularly important to engineering because unlike many other fields, most engineering students are full-time, of traditional college age. Moreover, recent gains in attracting nontraditional students to engineering have begun to lag. Although the number of women engineering graduates rose by ten-fold and the number of underrepresented minority engineering graduates tripled between 1975 and 1985, since then those numbers have been dropping. If we are to maintain our engineering workforce, we must find stronger means to attract these students into engineering.

Given the seriousness of this challenge, the ASEE Engineering Deans Council, which is comprised of the deans of accredited U.S. engineering schools, earlier this year organized a task force, funded with an NSF grant, to examine what the deans of engineering could do individually and collectively to open up the engineering student pipeline. Among their recommendations, the deans agreed they should join or form regional consortia whose goals are to increase the numbers of minority and women graduates in engineering, and should re-focus the engineering school environment from one that "weeds out" the less-prepared students to one that identifies and nurtures a broad range of students. The deans also agreed they should set for themselves specific goals for recruiting and retaining underrepresented students. ASEE will soon make available to you a full copy of the deans' report and recommendations.

NSF has recognized the growing challenges of the engineering and scientific student pipeline and we endorse its increasing investment in addressing these issues through both the education and research directorates.

PRECOLLEGE. At the precollege level, the Foundation supports a number of high-leverage activities designed not only to engage early-on those students who may become engineers and scientists, but to raise the technological literacy of all Americans. We strongly support these programs in teacher training, classroom materials development and informal education, and applaud the strong Congressional leadership in this area. NSF has been supportive of such efforts as the Junior Engineering Technical Society (JETS) sponsored jointly by NSPE and ASEE.

UNDERGRADUATE EDUCATION. A key section of the student pipeline for engineering is undergraduate education. In contrast to the sciences where the principal point of entry into the profession is the doctorate, about 70 percent of all engineers begin their careers with a baccalaureate degree. This makes it particularly critical that undergraduate engineering education be an up-to-date and effective educational experience.

Since the 1970's, undergraduate education -- the vital bridge between high school and professional careers or graduate study -- has been sorely neglected at the Foundation. In response to a 1986 report of the National Science Board, however, the Foundation has reintroduced support for undergraduate programs. While FY 1988 funding has been less than expected, we commend the agency for systematically reintroducing undergraduate activities and creating a new office of undergraduate education in the education directorate to coordinate Foundation-wide efforts. For FY 1989, NSF proposes spending about $65 million on undergraduate education and research, about two-thirds of which will be funded through the research directorates. This will support research opportunities for undergraduate students, women and minorities, instrumentation for the improvement of undergraduate teaching, curriculum development and faculty enhancement.

We strongly endorse these activities and believe NSF could effectively spend more than the $100 million per year on undergraduate activities recommended by the National Science Board report. There are two areas in particular we believe would benefit in FY 1989 from enhanced investment. Major curriculum revitalization projects were initiated in FY 1988 by NSF for both calculus and engineering. For calculus, this effort was recognition of the fact that as the basis for all physical sciences, the calculus curriculum needed to be updated. For engineering, it was recognition that with the rapidly changing nature of engineering practice and the impact of new instructional technologies, new approaches were needed in the undergraduate curriculum.

Although NSF had proposed spending $6 million on these programs in FY 1988, budget limitations reduced actual spending by half, to $3 million. The Foundation proposes to spend only $4 million for all curriculum revitalization in FY 1989. In light of the strong response NSF is already receiving from the academic engineering community alone, as well as the importance of systematically introducing new materials and methods into engineering and scientific curricula, we believe significant funding above the $4 million request would be a valuable investment.

At the same time, technological change has been so rapid in recent years that many engineering faculty cannot keep up with developments outside their own areas of expertise. NSF-supported experimental short courses and conferences with colleagues in industrial and academic research can enable faculty to catch up on technological developments and incorporate them into their teaching. Once again, we believe that funding above the $3 million request for faculty professional development would be an important investment.

OTHER STUDENT PIPELINE ACTIVITIES. An area of great importance is NSF's program in the education directorate to create regional centers in which minority students would be tracked and nurtured in mathematics, science and engineering from elementary school through college. We believe this program has significant potential for addressing the varied factors that limit entry of underrepresented minorities into engineering and scientific careers. We also commend the Foundation for its initiatives in promoting research opportunities for women, minorities and the disabled. These programs help create the role models that are vital for increasing the flow in the student pipeline.

GRADUATE EDUCATION. One of the biggest challenges facing engineering education is attracting greater numbers of U.S. students to engineering faculty careers. According to a recent report by the National Academy of Engineering (NAE), nearly 50 percent of all engineering assistant professors age 35 years or younger are foreign-born.

The failure to attract U.S. students into engineering faculty careers is a result of several factors, including the availability of jobs in industry for BS graduates at salaries that make graduate study relatively unattractive. However, we believe prestigious NSF fellowships and research opportunities offer useful incentives for the brightest students to consider academic engineering careers. We strongly endorse the Foundation's plan to increase the number of Presidential Young Investigator awards and graduate research fellowships in FY 1989. We also believe that graduate fellowship stipends should be increased for fields such as engineering and computer science where market forces keep baccalaureate salary levels high.

We also recognize the importance to the academic pipeline of NSF research grants. Only 12 percent of the graduate students supported by NSF participate in the graduate research fellowship program. Most of the nearly 15,000 NSF-supported graduate students are research assistants funded through faculty research grants.

If we hope to attract more U.S. students to academic engineering careers, additional steps must be taken to remove financial barriers to graduate study. Federal grant stipends should be raised to equal one-half the average starting salary of an engineering graduate. For NSF, that would mean raising graduate research fellowship stipends in engineering from $12.300 to about $15.000. At the same time, full tax deductibility should be restored for both graduate student stipends and tuition remission. To attract more students into faculty teaching careers, the federal government should consider offering forgiveness on student loans to those who undertake careers in teaching.

SUMMARY. Through the Foundation's role as a catalyst for academic activity and its ability to leverage resources, we believe NSF programs can make a significant difference in promoting the nation's economic well-being. By helping educate the engineers and scientists who will keep us at the forefront of technological achievement and competitiveness and by sponsoring cutting-edge research and technology transfer, NSF is contributing directly to the nation's engineering and scientific strength.

The Engineering Education Task Force supports substantial increases in NSF research funding for FY 1989, particularly in engineering research. We also urge you to consider increases above the budget request for faculty development and curriculum revitalization programs. We believe the Foundation's education and research programs represent a sound investment that will benefit the nation for decades to come.

VETERANS ADMINISTRATION

INTRODUCTION OF WITNESSES

Senator PROXMIRE. The next panel will present testimony on the Veterans Administration budget request. The witnesses will be Mr. Jesse Brown, representing Disabled American Veterans; Mr. Frank DeGeorge, representing Paralyzed Veterans of America; Mr. Dennis Cullinan, representing Veterans of Foreign Wars.

Gentlemen, I understand this is a prearranged panel; so, why don't you proceed as you had planned?

I understand that you have 4 minutes each. I realize that you have some very important material. We have your written statements; so, go right ahead.

STATEMENT OF DENNIS CULLINAN, ASSISTANT DIRECTOR, NATIONAL LEGISLATIVE SERVICE, VETERANS OF FOREIGN WARS OF THE UNITED STATES

Mr. CULLINAN. Thank you, Mr. Chairman. I am Dennis Cullinan of the Veterans of Foreign Wars. On behalf of the VFW, I would like to thank you for this opportunity to present our views with respect to the proposed VA appropriation for fiscal year 1989. We are appreciative of the subcommittee holding this hearing, demonstrating a strong, continuing concern for our nation's veterans.

INDEPENDENT VA BUDGET PRESENTED

Before I present the VFW's recommendations, I am proud to say that we have once again joined the AMVETS, Disabled American Veterans, and Paralyzed Veterans of America in constructing and presenting to the Congress an independent budget for the VA.

The appropriations recommendations we will be presenting here today ensue directly out of the independent budget, and we believe will provide sufficient funding to at least ensure the provision of current services.

CONSTRUCTION APPROPRIATION

In this regard, the VFW specifically is tasked with the discussion of construction, and today we will address the VA construction appropriation for fiscal year 1989.

As in other VA programs, need forms the basis for the appropriate level of construction. However, we have found at this time that the VA does not have the information required to formulate a needs-based construction appropriation request.

Because neither we nor the VA knows what the construction needs are or what construction priorities should be, we are recommending very low total construction appropriation for fiscal year 1989, appropriations totaling $541 million. Within this constrained total, we recommend a relatively large amount for minor construction in order to provide for updating and repairing of VA facilities, most of which are now quite old.

We believe the true total of the construction needs may be a good deal higher than the total appropriation of $541 million we are recommending. However, both the current federal budget deficit and the VA's lack of basic information it needs for construction planning support our endorsement of a conservative appropriation.

NATIONAL CEMETERY SYSTEM

Our construction budget also reflects the reestablishment of a reasonable strategy for locating cemeteries in the national cemetery system. The four major veterans' organizations are unanimous in agreeing that the true national cemetery system that it offers veterans must be two criteria. It must have a national cemetery available in every state, and there must be a national cemetery with available grace space within reasonable distance of the nation's major veteran population centers.

With respect to specific funding, we recommend $368 million be appropriated for major construction in fiscal year 1989, $35 million less than in fiscal year 1988 and almost $220 million less than was obligated in fiscal year 1987.

We recommend this reduction in part because the VA lacks the information and processes to evaluate construction needs and in part because of the general federal budget constraints.

We have specifically designated $30 million for construction of new VA nursing homes. This amount will fund four nursing homes with 120 beds each. We feel that the aging veteran population requires this rate of addition of new VA nursing homes each year throughout the 1990's.

MINOR CONSTRUCTION

With respect to minor construction, we recommend $169 million for fiscal year 1989. We recommend this amount because of the importance of updating and repairing VA facilities. The largest number of VA facilities date from the 1950's, which means they are at an age when needs for updating and for repair and replacement are high.

Moreover, we recommend $169 million for 1989, and this is actually slightly below the obligation level achieved in fiscal year 1987.

Most of the total minor construction appropriation, $100 million to be specific, should be spent on medical construction. Of these medical funds, we recommend that $20 million be set aside for the conversion of medical center space to nursing home use and be available only for this purpose.

Modest amounts of the minor construction appropriation pay for construction projects in the VA's regional offices and its existing national cemeteries. Based on recent year spending patterns, we estimate the $5 million and $10 million, respectively, are appropriate for these purposes.

Finally, we recommend that $54 million of minor construction funds be spent for the VA staff that oversees the construction process.

Mr. Chairman, this concludes my statement.

Senator PROXMIRE. Thank you very much, Mr. Cullinan.

[The statement follows:]

STATEMENT OF DENNIS M. CULLINAN, ASSISTANT DIRECTOR, NATIONAL LEGISLATIVE SERVICE, VETERANS OF FOREIGN WARS OF THE UNITED STATES

Mr. Chairman, thank you for the opportunity to present the views of the Veterans of Foreign Wars with respect to the proposed VA appropriation for Fiscal Year 1989. We are appreciative of this Subcommittee for holding this hearing, demonstrating your continuing concern for our nation's veterans.

Before presenting the Veterans of Foreign Wars recommendations for the FY 1989 VA appropriation, I am proud to say that we have once again joined AMVETS, Disabled American Veterans and Paralyzed Veterans of America in constructing and presenting to the Congress an independent budget for the Veterans Administration. Unlike last year, the FY '89 Independent Budget encompasses all Veterans Administration programs and, as the name indicates, is independent of the Office of Management and Budget's (OMB) influence. The appropriations recommendations we will be presenting here today ensue directly out of the Independent Budget and we believe, will provide sufficient funding to at least ensure the provision of current services.

The formulation of the Independent Budget requires the unanimous approval of the concerned veterans' organizations and the figures contained in this budget have the full support of the VFW. In this regard, the VFW is specifically tasked with the discussion of the construction component of the proposed FY '89 VA funding level and today we will specifically address the VA Construction Appropriation for FY 1989.

As in other VA programs, need forms the basis for determining the appropriate level of funding for construction. However, we have found at this time that the VA does not have the information required to formulate a needs-based construction appropriation request. In formulating such a request, an inventory basis should include the recognition of maintenance and repair needs of existing structures, systems and equipment used by medical centers; shortfalls in existing space, systems and equipment needed for the current activities of medical centers; and shortfalls in the space, systems and equipment that will be required by future medical center operations. The VA does not have an adequate inventory of construction needs, and the focus of the recently completed Capital Facilities Study is too narrow to serve as an inventory in this sense. Currently, the VA's construction priority-setting is limited to choosing among projects submitted by medical centers in the Five Year Facility Plan. These projects may or may not address the needs of the VA on the whole as the VA sees them on a priority basis. What is actually happening is the VA does little more than pick its projects from 172 uncoordinated "laundry lists." The current prioritization method simply places requested projects in priority order and does not address true priority need.

The absence of a sound basis for establishing construction priorities is but one of the major deficiencies in the VA construction process identified by careful studies the VA itself commissioned. These include excessive time required for projects--typically ten years from conception to completion; costs that are sometimes excessive; and, the inability to deal systematically with problems in the construction process.

In addressing the VA's construction needs, our most urgent concern is for the VA to develop a construction process that works well. We envision a process that completes projects more rapidly; chooses projects based on need and on a sound system for setting priorities; provides projects that adequately meet medical centers needs; is economical; and, catches problems quickly before they become severe through a system of standards and indicators for monitoring on-going performance along important dimensions such as quality, timeliness and cost.

An immediate task for the agency in meeting these goals is to develop a sound Facility Development Planning Process (FDPP). The successful completion of the pilot test program for the FDPP, involving four VA medical centers, is a prerequisite to implementing this new process system-wide. Once a proper Facility Development Planning Process has been established, the foundations necessary for developing a needs-based construction budget will be in place.

Because neither we nor the VA knows what construction needs are and what construction priorities should be, we are recommending very low total construction appropriations for FY 1989, appropriations totaling $541 million. This is close to $225 million, or almost 30 percent, below the record construction obligations of $766 million achieved in FY '87, and is only $18 million above the very tight appropriation total enacted in FY '88. Within this constrained total, we recommend a relatively large amount for minor construction in order to provide for the updating and repairing of VA facilities, most of which are now quite old.

We believe the true total of construction needs may be a good deal higher than the total appropriation of $541 million we are recommending. For example: the VA is contracting for only two replacement hospitals or top-to-bottom renovations of hospitals each year, which means it is on an absurdly long 86-year replacement cycle for its 172 hospitals. However, both the current Federal budget deficit and the VA's lack of the basic information it needs for construction planning support our endorsement of the conservative appropriations.

Our construction budget also reflects the re-establishment of a reasonable strategy for locating cemeteries in the National Cemetery System. At OMB's insistence, the VA has for years maintained that the system need have no more than one national cemetery with available burial space in each of the ten federal regions. This means extremely long travel distances for widows and children of veterans honored by burial in a national cemetery. Realistically, it deprives many veterans of an option of burial in a national cemetery.

The four major veterans' organizations are unanimous in agreeing that a true National Cemetery System that offers veterans what it appears to promise must meet two criteria: (1) It must have a national cemetery with available grave space in every state. (At this time, eight states do not have open national cemeteries.) and (2) There must be a national cemetery with available grave space within reasonable distance of the nation's major veteran population centers. This budget starts the process of making the National Cemetery System meet these two criteria.

With respect to specific funding levels, we recommend $368 million be appropriated for major construction in FY 1989, $35 million less than in FY '88, and almost $220 million less than was obligated in FY '87. We recommend this reduction in part because the VA lacks the information and processes to evaluate construction needs and in part because of general federal budget constraints.

Within the $368 million total, we recommend $40 million for the advance planning fund and design fund. These funds permit projects to move continuously through the planning and design stages of the construction process rather than suffering lengthy interruptions while waiting for appropriations. As such, they deal with one of the major problems that has made VA projects take overly long to complete. The $40 million recommended for these funds substantially exceeds the amount allocated to them in past years. In funding them generously, we are seeking to accelerate the construction process. More importantly, we wish to ensure a large dollar volume of projects "in the pipeline." Underfunding in this area leads to a choking off of projects by constricting the front-end planning and design stages. Our strategy of generous funding will permit a rapid expansion of the overall volume of major construction projects once VA priority-setting improves and the deficit declines.

We have specifically designated $30 million for construction of new VA nursing homes. This amount will fund four nursing homes with 120 beds each. The aging of the veteran population requires this rate of addition of new VA nursing homes each year throughout the 1990s.

Finally, our recommendation for the major construction appropriation include $3 million for the acquisition of land for a new national cemetery in a state that currently has none. We recommend the addition of two new national cemeteries with available grave space each year until the National Cemetery System meets our two goals. We believe that one new cemetery each year can be obtained by donation from a state, and have budgeted for purchase of land for a second. The remaining $295 million of the major construction appropriation should be devoted to other medical construction projects.

With respect to minor construction, we recommend $169 million for FY 1989. The minor construction appropriation funds smaller projects, mostly ones devoted to keeping VA facilities in repair and up-to-date. Our recommendation of $169 million for this appropriation for FY 1989 is an increase of $53 million from the FY '88 level. We recommend this increase because of the importance of updating and repairing VA facilities. The largest number of VA facilities date from the 1950s, which means they are at an age when needs for updating and for repair and replacement are high. Moreover, the recommended $169 million for FY 1989 is actually slightly below the obligation level achieved in FY '87.

Most of the total minor construction appropriation--$100 million to be specific--should be spent on medical construction. Of these medical funds, we recommend that $20 million be set aside for conversion of medical center space to nursing home use, and be available only for this purpose. Modest amounts of the minor construction appropriation pay for construction projects in the VA's regional offices and its existing national cemeteries. Based on recent years' spending patterns, we estimate that $5 million and $10 million, respectively, are appropriate for these purposes. Finally, we recommend that $54 million of minor construction funds be spent for the VA staff that oversees the construction process. This consists primarily of the Office of Facilities, and we recommend continuation of the current staffing level.

Mr. Chairman, this concludes my testimony, once again I wish to strongly commend you and the members of the Subcommittee for conducting this hearing so that the Veterans Administration may be provided with sufficient funding to ensure that this nation's deserving veterans receive the proper and compassionate care they have earned through service to the nation. VFW Resolution No. 738 entitled, "Adequately Fund the Veterans Health Care System Construction Program" is appended to this statement. Thank you and I will be happy to respond to any questions you may have.

Resolution No. 738

ADEQUATELY FUND THE VETERANS HEALTH CARE SYSTEM CONSTRUCTION PROGRAM

WHEREAS, the Veterans Administration construction appropriations provides for renovation and replacement, as needed, of the physical plant of the Veterans Administration health care delivery system; and

WHEREAS, the Veterans Administration health care system is comprised of 172 hospitals, 226 outpatient clinics, 117 nursing home care units, and 16 domiciliaries of which 50 percent are now over 30 years old; and

WHEREAS, within the Veterans Administration health care system many of the aging facilities need replacement, renovation, modernization, reconfiguration and improvements relating to fire, safety and privacy standards to make them suitable for the practice of modern medicine; now, therefore

BE IT RESOLVED, by the 88th National Convention of the Veterans of Foreign Wars of the United States, that we urge Congress, in its annual appropriations, to provide funds to enable the Veterans Administration to carry out a planned program of modernization or replacement of aging facilities and maintaining an up-to-date system of health care facilities, and one suited to its mission of providing medical services for the nation's veterans.

Adopted by the 88th National Convention of the Veterans of Foreign Wars of the United States, held in New Orleans, Louisiana, August 14-21, 1987.

Resolution No. 738

STATEMENT OF JESSE BROWN, DEPUTY NATIONAL SERVICE DIRECTOR, DISABLED AMERICAN VETERANS

Senator PROXMIRE. Mr. Brown, are you next?

Mr. BROWN. Yes; I am.

Senator PROXMIRE. Go ahead, please.

Mr. BROWN. Mr. Chairman, on behalf of the more than 1 million members of the Disabled American Veterans and its ladies auxiliary, may I say how very much we appreciate the opportunity to appear here today.

At the outset, we wish to make a general statement regarding the President's proposed fiscal year 1989 budget for the Veterans Administration. In our view, the proposed budget fails to provide minimum funding to maintain current services at fiscal year 1988 levels and would make serious personnel cutbacks in both DM&S and DVB. VA health care services and veteran claim processes will suffer should the VA's budget be approved as proposed by the President.

In the interest of time, we would like to focus our oral comments on the VSA's independent budget as it relates to the VA's Department of Veterans' Benefits.

DEPARTMENT OF VETERANS' BENEFITS

The independent budget seeks funding for the GAE account over and above what is necessary to maintain current services. This includes an increase in DVB employment of 543 FTE and funding designated for training of adjudication staff.

The cost of these proposals is approximately $17 million. The proposed DVB employment increases would provide 342 employees for the Compensation and Pension Service, 33 for vocational rehabilitation and counseling, and 148 for veterans' services.

With respect to training, we recommend a training staff of 15 employees to be established at a cost of $650,000. We believe that DVB program staffs should provide assistance in developing educational modules and administrative support for this training from existing resources.

Further, training emphasis should be on employees involved in adjudicating applications for benefits. In our view, it is essential that immediate improvement in the quality and timeliness of benefit determinations be achieved.

In addition to increased staffing and improved training, we strongly support and acceleration of 80 system modernization to include integration among all VA departments and other federal agencies.

Mr. Chairman, the reasons for our proposed increases in GOE are due to the general and progressive erosion in the quality and timeliness of service provided to veterans and their families by DVB during the past decade. This deterioration in service is parallel to the arbitrary cuts in staffing.

For example, CP&E positions were reduced from 5,746 in fiscal year 1978 to 3,583 in fiscal year 1986, a decrease of 37.6 percent. During that period, the reduced volume of work would have justified a staffing reduction of 18.7 percent. This conclusion is supported by the VA's own system of assigning base wage to completed end products.

Also, quality control and training functions have not been given proper attention in DVB because no funds have been available for these vitally important activities.

INADEQUATE STAFFING

Due to gross inadequate staffing, there are huge backlogs in VR&C programs, for example. VA vocational rehabilitation specialists have an average workload of 182 cases, compared to a workload of 60 cases for comparable staff in state and other federal rehabilitation programs.

In veterans' services, nearly 1 million telephone calls in fiscal year 1987 went unanswered because of staff overload. By our standards, this is totally unacceptable service for veterans. It is clear that, to restore a reasonable level of service to veterans, the budget must provide the resources.

As the independent budget proposals demonstrate, this can be accomplished with a modest increase in GOE appropriations for DVB. Moreover, for the near and long term, the independent budget proposals are designed to increase quality and productivity, the two essentials for cost-effective administration of VA programs.

Mr. Chairman, this concludes my testimony; and I again would like to thank you for allowing us this opportunity to present our views on these important issues.

Senator PROXMIRE. Thank you very much, Mr. Brown.

[The statement follows:]

STATEMENT OF JESSE BROWN, DEPUTY NATIONAL SERVICE DIRECTOR, DISABLED AMERICAN VETERANS

On behalf of the more than one million members of the Disabled American Veterans and its Ladies' Auxiliary, may I say how very much we appreciate the opportunity to appear here today to comment on the Fiscal Year 1989 appropriation proposal for the Veterans Administration.

As you know, Mr. Chairman, on behalf of the Veterans Administration, the President is requesting $27.9 billion -- an increase of $865 million over Fiscal Year 1988 funding levels -- to administer the various programs and services for this nation's 78.5 million veterans, their family members and survivors of deceased veterans in Fiscal Year 1989.

MEDICAL CARE

The Fiscal Year 1989 appropriation request for the Department of Medicine and Surgery (DM&S) calls for overall appropriation authority in the VA's medical care account of $10.3 billion -- an increase of $208 million over the Fiscal Year 1988 level.

Mr. Chairman, in our view, notwithstanding the proposed funding increase, the VA's ability to provide quality and timely health care to America's entitled veterans will continue to erode should the Administration's proposal for the medical care account be enacted.

This is so in view of the fact that $114 million of the proposed increase in the medical care account has been requested specifically to absorb the cost of payroll increases, including the costs of the 1989 civilian pay raise and the Federal Employees' Retirement System (FERS).

The Administration's request proposes, among other things:

* reduction of $4.7 million and 79 FTEE in the VA's readjustment counseling program;

* an exaggerated staff to patient ratio adjustment resulting in the loss of 1,684 FTEE and $55.6 million;

* 135 fewer FTEE and a reduction of $6.4 million for the Decentralized Hospital Computer Program; and

* a projected 1% productivity increase (in reality an arbitrary 1% budgetary reduction) estimated to save $65 million and reduce FTEE by 1,944 in Fiscal Year 1989.

As you may have noted, Mr. Chairman, an additional 1,882 FTEE are being proposed to staff new activations in Fiscal Year 1989. However, the cumulative effect of the Agency's average medical care employment in Fiscal Year 1989 will be a net reduction of 1,782 FTEE.

According to all estimates, the Administration's proposed DM&S budget for Fiscal Year 1989 falls at least $370 million short of the minimum funding level necessary simply to maintain veterans' health care services at current Fiscal Year 1988 levels.

Mr. Chairman, we encourage you and members of the Subcommittee to carefully scrutinize the Fiscal Year 1989 funding levels proposed for the VA medical care account. We believe such scrutiny will lead you to propose a realistic and meaningful funding level that will, at the very least, enable the Agency to provide health care services to those veterans so entitled.

In this respect, Mr. Chairman, we would further urge you to carefully consider the recommendations and funding levels as contained in the Independent Budget for Veterans which has been provided to the Subcommittee. This budget document represents the cumulative and cooperative efforts of several major veterans' service organizations (AMVETS, DAV, PVA and VFW) and represents, in our view, a realistic funding level that would allow the Agency to carry out its mandated mission of providing health care services to disabled veterans.

MEDICAL AND PROSTHETIC RESEARCH

Mr. Chairman, the Administration's Fiscal Year 1989 medical and prosthetic research request is $204.2 million ($11 million above the Fiscal Year 1988 funded level).

The DAV has, and continues to be, fully supportive of the VA's combined research efforts. It is discouraging, however, to continue to witness the large disparity in the funding levels for medical research ($175.8 million) and that requested for prosthetic research ($18.9 million) and it is truly disheartening that the current request for prosthetic research has been reduced by $1.5 million from the 1988 level. The DAV supports the mission of Health Services Research and Development and we are encouraged by and support the funding requested.

CONSTRUCTION

The VA's Fiscal Year 1989 construction request totals $500.6 million. Mr. Chairman, while we support full funding of the VA's request for construction purposes, we are nevertheless concerned over the VA's effort to meet the pressing demands on the health care system, especially since the proposed level of funding falls $22 million below the Fiscal Year 1988 level.

As you know, greater numbers of elderly veterans are seeking nursing home care from the VA, yet, in this construction budget proposal only one (1) new 120 bed nursing home care unit has been requested. Additionally, we are concerned that this construction budget request fails to recognize the replacement and modernization needs of the VA's many aging health care facilities. In this regard, Mr. Chairman, we urge the Subcommittee to favorably consider the construction recommendations of the Independent Budget.

We have noted and support the VA's proposal to convert 289 hospital to nursing home care beds. However, in so doing, we would urge the Administration to move swiftly in the conversion process and, when and where indicated, identify additional acute care beds that may realistically be converted to nursing home care. In doing so, we trust an appropriate balance will be maintained to meet the acute, intermediate and long-term health care needs of our rapidly aging veteran population.

DEPARTMENT OF VETERANS BENEFITS

The VA's Fiscal Year 1989 request for the Department of Veterans Benefits (DVB) totals $503 million, a decrease of $5.2 million from the Fiscal Year 1988 level. We are seriously concerned, however, that average employment in DVB will decrease by some 492 FTEE.

Mr. Chairman, since 1979 nearly 5,300 employees have been slashed from DVB and, today, each regional office is barely staffed at minimum levels to adequately respond to the workload and demands for services placed upon it from veterans and their dependents.

We have very grave concerns about the VA's ability to continue to provide needed services to beneficiaries and the proposal to reduce average employment will only serve to further curtail the services that the VA is charged to provide.

In this regard, Mr. Chairman, the DAV strongly urges the Subcommittee to adopt the funding level recommended for DVB by the Independent Budget for Veterans.

PROPOSED LEGISLATION

The Administration's Fiscal Year 1989 request proposes legislation that would provide for (1) an increase of 4.2% in the rates of disability compensation and Dependency and Indemnity Compensation (DIC), effective December 1, 1988; (2) index compensation benefits to the annual change in the Consumer Price Index; (3) change current law to provide for the VA plot allowance to be paid only in the case of those veterans who were either in receipt of VA compensation or pension benefits at the time of death or to wartime veterans who died without sufficient resources for burial; (4) amend current law to permit lender/borrower negotiated interest rates on VA guaranteed home loans; (5) transfer the administration of the Veterans Mortgage Life Insurance (VMLI) Program to the VA; (6) repeal authority for the Education Loan Fund; (7) increase the per diem paid to state veterans homes; (8) expand the authority to allow tuition reimbursement to nurses for degree related courses; and (9) government-wide credit reform that will identify the grant equivalent subsidy of all federal credit programs -- directly impacting on the VA Home Loan Guaranty Program.

Mr. Chairman, the DAV is pleased with the Administration's proposed cost of living adjustment in the rates of disability compensation and DIC benefits -- in recognition of the special consideration service-connected disabled veterans and their survivors should be given.

Accordingly, the DAV strongly supports the enactment of legislation that would provide disability compensation and DIC recipients with a cost of living adjustment in line with the rise in the Consumer Price Index, effective December 1, 1988.

As strongly as we support this rate increase, we adamantly oppose any effort to index compensation benefits to the annual change in the Consumer Price Index.

Mr. Chairman, in our view, the many and complex benefit programs administered by the VA deserve and, in fact, require continuous oversight scrutiny by the Congress. Any attempt to index compensation benefits is, in our view, an attempt to diminish the oversight functions of the Congress. Such a result would not be in the best interest of the VA or, more importantly, the beneficiaries they are mandated to serve.

Additionally, we view the initiative to "standardize" the eligibility for the VA plot allowance as simply another example of an Administration effort to repeal an entitlement that has been bought and paid for by honorably discharged veterans. Accordingly, the DAV opposes this legislative proposal.

The DAV remains adamantly opposed to any proposal to remove the Administrator's authority to set the interest rates on VA guaranteed home loans. Should this occur, interest rates would then be dictated by mortgage lenders at, we suspect, a level significantly higher than would be set by the Administrator. Without doubt, all veterans, including service-connected disabled veterans, would be adversely affected by such a procedure.

Also, Mr. Chairman, the Administration is seeking the enactment of government-wide credit reform legislation that will, according to VA budget documents, identify the grant equivalent subsidy of all federal credit programs, including those administered by the VA, and require subsidy payments to one of two central revolving funds to be established at Treasury.

This subsidy would be created, according to the Administration, in recognition of the necessary resources required to reflect the true cost of credit for effective federal budgetary control. In their view, federal credit programs provide more favorable terms than borrowers could otherwise obtain in the private market, thereby resulting in a subsidy to the borrower.

The Administration has proposed specific equivalent subsidy (percentage) values for all VA loans -- guaranteed, direct and vendee -- that will require an appropriation in Fiscal Year 1989 of more than $1.3 billion to fulfill the requirements of their proposal. While, at the same time, they estimate to reduce VA loan program budget authority and outlays by more than $246 million.

From the information provided, it appears that the VA's Revolving Funds would eventually be eliminated, while the VA would, apparently, continue to administer their various loan programs.

Mr. Chairman, the DAV has some serious reservations and questions regarding this credit reform proposal. For example:

* By eventually terminating VA revolving funds, does this mean that certain VA functions, such as property management, will also be transferred to Treasury?

* Is the equivalent subsidy appropriation really required "up front" without first determining the actual needs of the fund?

* Will the "up front" appropriation be specifically earmarked for VA loan programs, or will it become available to settle indebtedness in other federal loan programs?

* Will the VA be required to change the manner in which they currently administer their various loan programs?

* Should the manner and procedures the VA currently follows to administer their loans change, what impact will this have on eligible VA beneficiaries?

The Administration, in our view, has failed to provide convincing information for the DAV to support their credit reform proposal. In addition, it is unclear how they justify reducing loan program outlays in Fiscal Year 1989.

Mr. Chairman, contrary to the information provided in the Administration's budget documents (attempting to justify their credit reform proposal) it would appear that the real purpose of the reform is to limit all new loan obligations in the near term with the ultimate goal of virtually eliminating all such federal programs.

There is one proposal clearly missing from this budget request -- an authorization and appropriation request for the Veterans' Job Training Program. We urge the Subcommittee to favorably consider extending and funding this important program.

In closing, Mr. Chairman, as we have noted several times during the course of our testimony today regarding the VA's proposed Fiscal Year 1989 appropriations, we strongly endorse the combined effort of several veterans' service organizations. That effort is the Independent Budget for Veterans.

We urge the Subcommittee to favorably recommend to your colleagues in the full Committee and the United States Senate, levels of funding in the Fiscal Year 1989 HUD and Independent Agencies Appropriations bill that are consistent with funding recommended by the veterans' service organizations Independent Budget proposal. It is our view, Mr. Chairman, that these funding recommendations represent realistic levels to adequately address the needs of all programs, benefits and services administered by the VA.

Mr. Chairman, this concludes our testimony. Again, I wish to thank you and the members of the Subcommittee for allowing us this opportunity to present the views of the DAV on this important issue.

STATEMENT OF FRANK R. DEGEORGE, ASSOCIATE LEGISLATIVE DIRECTOR, PARALYZED VETERANS OF AMERICA

Senator PROXMIRE. Mr. DeGeorge?

Mr. DEGEORGE. Good morning, Mr. Chairman. PVA's statement reflects our total support of the independent budget for veterans, prepared jointly by the AMVETS, DAV, VFW, and PVA; and I ask that a copy of the document or the budget in brief contained therein be placed in the record.

Senator PROXMIRE. Without objection, it will be printed in full in the record.

Mr. DEGEORGE. Thank you very much, sir.

MEDICAL CARE ISSUES IN INDEPENDENT BUDGET

My testimony today will address the medical care issues contained within the independent budget. PVA recognizes the need to reduce the federal deficit; however, in summary, the Senate Budget Committee's fiscal year 1989 mark for the Veterans Administration represented a general decrease of $300 million in budget authority and $150 million in outlays from the Congressional Budget Office baseline.

We are concerned that the Senate-passed budget does not contain directed moneys contained in the House-passed version, which provides an additional $50 million for AIDS-related treatment and an additional $50 million to be spent for the care and treatment of homeless veterans and general instruction to provide consideration for additional spending for health care and construction programs.

These are priorities. However, once again, this budget recommendation will fall below current services needs which will not accommodate the true demands placed on the Veterans Administration.

Mr. Chairman, during the past 5 fiscal years, we have witnessed a significant decline in the proportion of federal spending directed toward veterans' health care. In fiscal year 1985, 8.6 percent of all federal health dollars were directed to veterans' health care.

This year, veterans' health care accounts for only 7.6 percent of total federal health dollars. If veterans' health care had been given the same relative proportion of the health care budget as the average increase for all functions, which is a plus 6.4 percent, the President's budget for VA medical care would have been $11,302,000, or $492 million higher than that presented to Congress. This approximates the amount of funding recommended in the independent budget for fiscal year 1989.

In light of the above-noted evolutions in veterans' health care and in obvious recognition of the fiscal constraints under which you, the Congress, and the entire government must labor, the four organizations in their development of the independent budget have attempted to balance the needs of veterans with the reality of current fiscal requirements.

PRIMARY RECOMMENDATIONS

In keeping with this approach, our primary recommendations for the medical portion of the Veterans' Administration appropriations are:

(1) Restrict program enhancements to meeting the growing demand for medical care;

(2) Fully fund cost increases necessary to maintain current services;

(3) Rapidly expand noninstitutional long-term care;

(4) Expand nursing home programs recognizing the inevitability of an increased nursing home census, despite rapid expansion of noninstitutional long-term care;

(5) Rapidly expand outpatient acute care to 21.4 million staff medical visits, with the provision of $90 million while inpatient care is held constant;

(6) Enact statuary provisions extending entitlement for outpatient care to all category A patients and veterans; this entitlement is estimated to involve no net costs;

(7) Support a continuing prominent role in AIDS treatment;

(8) Conduct a survey to determine veteran's unmet needs for medical care;

(9) Initiate a multifaceted program to enhance the VA's recruitment and retention of critical health care professionals;

(10) Place a floor under resources allocated to VA psychiatric hospitals and services, with the floor at the level of fiscal year 1987 obligations;

(11) Enact statutory provisions requiring the VA to pay the costs that category A patients incur in traveling to and from VA health care facilities.

Mr. Chairman, PVA firmly believes that the recommendations as enumerated in the independent budget are essential for the maintenance of a viable, effective veterans' health care system. On that point, I would conclude my statement: and thank you very much allowing us to testify.

Senator PROXMIRE. Thank you, Mr. DeGeorge. Your timing is very good.

Gentlemen, thank you very, very much. You have made a fine presentation, and I very much appreciate it.

[The statement follows:]

STATEMENT OF FRANK R. DEGEORGE, ASSOCIATE LEGISLATIVE DIRECTOR, PARALYZED VETERANS OF AMERICA

Mr. Chairman and Members of the Subcommittee, I am Frank R. DeGeorge, Associate Legislative Director of Paralyzed Veterans of America, and on behalf of the members of Paralyzed Veterans of America, a congressionally chartered veterans' service organization, I want to thank you for affording me the opportunity to appear here today.

PVA appreciates the Subcommittee's efforts to conduct hearings, and for being able to express our views and concerns regarding this most important issue, the proposed Fiscal Year 1989 funding for the Veterans Administration.

All of PVA's members are veterans who have experienced catastrophic spinal cord injury or dysfunction. It is on behalf of these veterans who have considerable contact with the VA's Regional Offices and Medical Centers located throughout the United States that we present our views today.

SUMMARY

Mr. Chairman, PVA's statement reflects our total support of the "Independent Budget" for veterans prepared jointly by the AMVETS, DAV, VFW, and PVA, and I ask that a copy of the document, "Meeting the Challenge: To Keep the Promise, An Independent Budget By Veterans for Veterans' Programs Fiscal Year 1989," be included in the Record of this Hearing. My testimony, today, will address the medical care issues contained within the "Independent Budget."

INDEPENDENT BUDGET

The issues of concern to our membership are addressed in the "Independent Budget" for veterans. PVA is proud of its participation in this collaborative effort to devise a fair and equitable budget to meet the growing demand for quality medical care by this nation's veterans.

Over the past several years, PVA has observed that budgets for the Veterans Administration have basically rendered current services, providing for no real growth in benefits and services. PVA recognizes the need to reduce the federal deficit. However, in summary, the Senate Budget Committee's FY 1989 mark for the Veterans Administration represented a general decrease of $300 million in budget authority and $150 million in outlays from the Congressional Budget Office baseline.

Additionally, we are concerned that the Senate-passed budget does not contain directed monies contained in the House-passed version which provides an additional $50 million for AIDS related treatment; an additional $50 million to be spent for the care and treatment of homeless veterans; and general instruction to provide consideration for additional spending for health care and construction programs. These are priorities. However, once again this budget recommendation will fall below "current services" needs which will not accommodate the true demands placed on the VA.

Of even greater concern, Mr. Chairman, is our understanding that proposals are being considered that would reduce the allocations to this Subcommittee to a level substantially below that contained in the Budget Resolution. Any such reduction in the Subcommittee's allocation will have drastic effects on funding for the Veterans Administration and, in particular, the Department of Medicine and Surgery. Veterans' health-care has already experienced severe limitations as a result of fiscal restraint, further reductions will have the potential to jeopardize the system itself and endanger veteran-patients in need of care.

Mr. Chairman, and Members of the Subcommittee, during the past five fiscal years we have witnessed a significant decline in the proportion of federal spending directed towards veterans' health care. In Fiscal Year 1985, 8.6

percent of all federal health dollars were directed to veterans' health care. This year in the President's Fiscal Year 1989 budget proposal veterans' health care accounts for only 7.6 percent of total federal health dollars.

If veterans' health care had been given the same relative proportion of the health care budget as the average increase for all functions (+6.44%), the President's budget for VA medical care would have been $11,302 million or $492 million higher than that presented to Congress. This approximates the amount of funding recommended in the Independent Budget for FY 1989.

If the veterans' health care budget received the same relative proportion of the health budget as in FY 1985, the President would have requested $12.2 billion for FY 1989 or $1.4 billion more than the FY 1989 request -- a request more in line with the current budget requirements of the agency. It should be noted, however, that the VA health care budget has been inadequately funded over a significant period of years so that current services funding requirements are considerably understated.

The policy of inadequate budgets for veterans' health care ignores the demographic trends and eligibility changes for veterans. The veteran population, aged 65 and over, will have grown from 3 million in 1980 to over 7 million in 1990 (Veterans Administration, 1984). This trend suggests strong additional demand for VA medical services, because older persons generally have greater health care needs and lower incomes. Recent changes in eligibility standards are also likely to increase the demand for services.

Until recently, veterans were eligible for care on a priority basis. (Veterans who needed care for service-connected disabilities were given first priority, veterans with service-connected disabilities who needed care for nonservice-connected conditions came next, etc.) Under this system, the Veterans Administration could potentially deny care to large numbers of veterans because they were eligible for care only if resources were available.

Enacted in 1986, Public Law 99-272 established a three-tiered system of eligibility for VA medical care. This system defines one category of veterans that is entitled to inpatient hospital care and can be given outpatient care if it obviates the need for inpatient care or if it is related to an episode of inpatient care. These entitled veterans include those with service-connected disabilities, former prisoners of war, veterans who were exposed to atomic radiation or agent orange, those receiving a VA pension, those eligible for Medicaid and those whose incomes fall below a low-income threshold. This threshold is now set at $15,833 for those with no dependents, $18,999 for those with one dependent and $1,055 higher for each additional dependent (subject to annual adjustments reflecting cost-of-living).

Veterans meeting an income standard that is less stringent than that described above are eligible for hospital, outpatient and nursing home care if space is available. Those who fail to meet this income standard are eligible for care on a space available basis if they agree to pay deductibles and copayments similar to those of the Medicare program.

The net effect of Public Law 99-272 has been to extend inpatient medical care entitlement to large numbers of veterans, while retaining eligibility for other veterans on a space-available basis. About two-thirds of the veteran population, aged 65 and over, now qualify for some types of VA medical care as an entitlement, most of them through the low income provisions of the new law. The number of older veterans entitled to VA medical care will continue to grow as the veteran population, aged 65 and over, continues to expand rapidly.

Although the VA has been viewed as a safety net for veterans who by circumstance become unemployed, disabled or otherwise unable to meet their health care needs, the system is being reduced to the point where it can barely handle the highest priority of health care needed, and there is evidence to support the fact that some facilities do not provide care for any Category C patients.

In the area of research, the VA has suffered severe setbacks in recent years -- in spite of its record of research achievement. Because the VA cares for 7% of the AIDS patients in the United States, it is in a unique position to carry out research in this critical area in the five AIDS centers being established. One point three billion dollars ($1.3 billion) was included in the President's Budget for Education and Training and Research relative to AIDS, but none of these funds were targeted for the VA. This position is short sighted on the part of the Administration and not in the best interest of veterans, the Veterans Administration research and education programs, or medical research in general. The House, in approving its Budget Resolution, has moved to correct this by proposing some $50 million for veterans' research from its recommended $1.47 billion for HHS AIDS research. It is important that this be included as part of the ultimately enacted appropriation.

Mr. Chairman, in light of the above noted evolutions in veterans' health care and in obvious recognition of the fiscal constraints under which you, the Congress and the entire government, must labor, the four organizations in their development of the "Independent Budget" have attempted to balance the needs of veterans with the reality of current fiscal requirements. In keeping with this approach, our primary recommendations for the medical portion of the Veterans Administration's appropriations are:

- Restrict program enhancements to meeting the growing demand for medical care (rather than research, administration, or other activities) in light of the need for budget austerity.

- Fully fund cost increases necessary to maintain current services -- i.e., to maintain services at the FY 1987 level. This is particularly critical in research and grants for state extended care facilities; serious cuts will result in FY 1988 and 1989 if these increases are not funded. Fully funding the current services level in VA medical programs requires approximately $50 million more than has been appropriated in FY 1988 and a further increase of approximately $390 million for FY 1989.

- Rapidly expand non-institutional long-term care in recognition of the particularly rapid increase in demand for long-term care that accompanies aging. This includes increased hospital-based home care; more adult day health programs, community residential care, and geriatric evaluation units; more geriatric research, education, and clinical care centers; more respite care programs and hospices, all at a total cost of $47 million.

- Expand nursing home programs, recognizing the inevitability of an increased nursing home census despite rapid expansion of non-institutional long-term care. We recommend an increase of approximately 3,000 in census in VA, community and state nursing home programs at a combined total cost of approximately $43 million.

- Rapidly expand outpatient acute care to 21.4 million staff medical visits in FY 1989, with the provision of $90 million for this purpose, while inpatient care, which is far more costly, is held constant.

- Enact statutory provisions extending entitlement for outpatient care to all Category A veterans, the veterans who now have entitlement to inpatient care. This entitlement is estimated to involve no net costs.

- Support a continued prominent role in AIDS treatment (the VA is treating about 7 percent of all U.S. AIDS patients) funded with the $50 million increment expected to be required for caring for these patients.

- Conduct a survey to determine veterans' unmet need for VA medical care.
- Initiate a multi-faceted program to enhance the VA's recruitment and retention of critical health care professionals.
- Place a floor under resources allocated to VA psychiatric hospitals and services, with the floor at the level of FY 1987 obligations (and adjusted upward annually for payroll and inflation increases).
- Enact statutory provisions requiring the VA to pay the costs that Category A patients incur in traveling to and from VA health care facilities (above a per-trip deductible).

Mr. Chairman, Paralyzed Veterans of America firmly believes that the recommendations that are enumerated in the "Independent Budget" are essential for the maintenance of a viable effective veterans' health-care system. Likewise, we believe that the recommendations and funding levels contained in the "Independent Budget" regarding other aspects of the Veterans Administration, including the Department of Veterans Benefits and construction initiatives are critical if the VA is to continue to meet the requirements of the men and women for whom it is intended to serve.

CONCLUSION: In conclusion, we appreciate the fact that this Subcommittee has and will provide careful examination of the proposed funding for the VA and the needed scrutiny of the VA's programs to provide the necessary appropriations which you have done in the past. Further, we trust and continue to believe that your commitment to the veterans of this nation mirrors the intent of Congress.

Mr. Chairman, that concludes my statement. Thank you and the Members of the Subcommittee for your extremely deliberate and thoughtful considerations of this issue. I will attempt to answer any questions that I can.

STATEMENT OF MILTON CORN, M.D., DEAN, GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE, WASHINGTON, DC, ON BEHALF OF THE FRIENDS OF VA MEDICAL CARE AND HEALTH RESEARCH

Senator PROXMIRE. I am going to ask the next people to come forward in a group because they have similar identification and testimony. Dr. Milton Corn, Friends of VA Medical Care and Health Research; together with Dr. Seides of the American Heart Association; Dr. Farrar, Digestive Disease National Coalition; and Dr. Ferris, Association of Professors of Medicine.

All right, gentlemen.

Dr. Corn, would you go ahead, sir?

Dr. CORN. Mr. Chairman, members of the subcommittee, I am Milton Corn. I am dean of the Georgetown University School of Medicine. I am here today on behalf of the Friends of VA Medical Care and Health Research, a coalition of over 50 academic, health care, and public health organizations who have united to support the medical care and research programs of the VA.

I ask consent, sir, that our entire statement be included in the record.

Senator PROXMIRE. We will put it in full in the record, sir.

Dr. CORN. We appreciate this opportunity to present our views on the fiscal year 1989 appropriations for the VA. We believe that the VA programs are national priorities and that they should be funded accordingly. We support the recommendations of the independent budget developed by the veterans' service organizations.

In addition, we make the following observations.

OVERVIEW OF NEEDS

First, over 22 million patient visits were made to the VA in fiscal year 1987, making it the world's largest single health care delivery system.

Second, the VA will be required to devote greater resources to the challenges of an aging veterans population.

Third, changes in VA eligibility in such diseases as AIDS require that the VA hospital-based system of acute care be sustained and selectively expanded.

Last, the VA now faces shortages of nurses and other associated health professionals.

For fiscal year 1988, Congress provided the VA medical care account with $10.12 billion. To adjust for inflation and other uncontrollable costs, we believe your subcommittee should operate from an fiscal year 1989 current services budget for medical care of $10.54 billion.

DETAILED ENHANCEMENTS

To this figure, we believe the enhancements detailed in the independent budget should be made, particularly in the following areas.

(1) Increase the number of geriatric research education and clinical centers from 12 to 16, at an additional cost of $10 million;

(2) Increase funding by $11 million for education and training of physicians and associated health professionals;

(3) Provide additional funds to support increased workload due to AIDS patients; and

(4) Provide funds to develop programs to alleviate the shortages of nurses and other health professionals.

Therefore, we join with those organizations supporting the independent budget by recommending a fiscal year 1989 medical care appropriation of $10.82 billion.

RESEARCH

In considering research, it is important to realize that research at the VA compliments the medical care efforts. These programs serve to attract to the VA distinguished physician scientists, who not only engage in research, but also provide qualified medical care.

Research performed at the VA by M.D. and Ph.D. scientists has led to improvements in diagnosis, treatment, and prevention of a number of diseases and disorders; and these efforts have been recognized by such distinguished honors as the Nobel Prize and the Lasker Award.

VA research efforts focus on the needs of veterans; but, of course, the population as a whole benefits. Examples of ongoing research include medical problems of the elderly, including osteoporosis and Alzheimer's, spinal cord injuries, diabetes, and respiratory diseases such as emphysema. And in addition, the VA is significantly involved in AIDS research.

Since 1985, funding for the research has increased moderately; however, the medical research program has declined over 4 percent. This is illustrated by trends in VA merit review; and in the last year, the number of these awards has dropped from 718 to 523. The percent being funded has dropped to 50 percent.

This situation discourages medical researchers and translates into the loss of discovery.

Therefore, Mr. Chairman, we recommend an overall research appropriation of $235.6 million. Only two research activities would be expanded, $4 million for special initiative and $3 million for purchase of state-of-the-art research equipment.

The Friends of VA Medical Care and Health Research thank you and the members for the opportunity to present our views. I will answer questions if I can, sir.

Senator PROXMIRE. Thank you very much, Dr. Corn.

[The statement follows:]

STATEMENT OF MILTON CORN, M.D., DEAN, GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE, ON BEHALF OF FRIENDS OF VA MEDICAL CARE AND HEALTH RESEARCH

Sharing a common concern for ensuring necessary levels of support for the Veterans Administration's medical care and research programs, a diverse group of organizations is inaugurating this effort to promote greater support for the VA Medical Care System. This proposal, endorsed by the organizations listed on the last page, embodies this effort by making recommendations for appropriations for VA medical care and health research for FY 1989.

Care for those who have served in defense of our country has always been one of our highest national priorities. It was for this reason that the VA was established in 1930 and greatly expanded following the Second World War. In the intervening years, the medical care and research programs at the VA have gained renown as they provide high quality health care for veterans and represent vital components of our nation's medical enterprise.

While the effort of the VA is necessarily targeted at the needs of veterans, many of the medical advances achieved at the VA have benefited the population as a whole. Therefore, it is in the interest of all Americans to view the medical care and research programs at the VA as national priorities and fund them accordingly.

The organizations uniting behind this proposal are acutely aware of the necessity for responsible budgeting by federal policy makers. However, we do not believe that putting undue strain upon the VA research and medical care system is a prudent or responsible approach to reducing the federal deficit. The Friends of VA Medical Care and Health Research urge the Congress to adopt this recommendation.

BACKGROUND

In FY 1987, over 22 million patient care visits were made to VA health care facilities by veterans. The Medical Care appropriation provides the vast majority of the funding for the VA's Department of Medicine and Surgery. It includes funding for the provision of health care at all VA medical centers, outpatient clinics, nursing homes and special treatment centers. In addition, the Medical Care appropriation supports the VA's large education and training effort through affiliations between over 100 medical and health professions schools and VA medical centers.

The mission of the VA health care system, as mandated in statute, is:

- to develop and maintain a national hospital and health care system;
- to carry out a program of education and training of health care professionals;
- to conduct research in support of medical excellence; and
- to furnish health care services to members of the armed forces in the event of war and to encourage sharing of resources between the Department of Defense medical system and the VA.

In order to accomplish this mission, the VA health care system must conduct a number of interrelated activities, including:

- the management of a complex national system of health care delivery sites, providing hospital, medical and socio-medical care that delivers appropriate services to all those eligible for such services; and
- academic affiliations with medical, dental and other health professions schools, enabling the VA to recruit and retain highly qualified health professionals and provide a program of continuing education for VA staff.

The manner in which health care is delivered by the VA -- and the level of services provided -- has changed dramatically in recent years, as the needs of veterans have changed. Because of the increasing age of the veteran population, the VA will be required to devote greater resources to the challenges of chronic illness and to develop improved methods of long-term care and other services related to care for the elderly. Also, changes in VA eligibility and the threat of such deadly diseases as AIDS require that the hospital-based system of acute care for which the VA is best known must be sustained and even selectively expanded in some areas. Additionally, the VA now faces (along with the entire US health care system) shortages of nurses and other associated health professionals, at a time when the demand for VA services in many areas continues to rise.

It is important to recognize that the VA health care system is an integral part of the American health care network. Like other members of the national medical community, the VA has had to adapt to the rapid changes in health care delivery brought about by the introduction of new technologies and the greater utilization of ambulatory care settings. These and other changes have increased pressure on the VA for cost effective management and operations, without compromising the high standard of care delivered through the VA health care system.

The VA's first priority must remain the provision of the highest quality health care to our nation's veterans. It is clear that funding provided through the VA Medical Care appropriation must be targeted to meet the challenges confronting the VA health care system.

FY 1989 BUDGET

The Friends of VA Medical Care and Health Research supports an FY 1989 Medical Care appropriation of $10.82 billion -- the level recommended in the Independent Budget developed by the four veterans service organizations. We support their awareness of the need for fiscal responsibility in this time of continuing federal budget deficits. Nevertheless, we share their view that the highest priority must remain the provision of quality health care to our nation's veterans.

o Current Services

The current service level for any given year is the amount of funds required to provide the same program levels as were provided in the previous year. For FY 1988, Congress provided a Medical Care appropriation of $10.12 billion. It was stipulated that this level of funding would support 194,140 full-time employee equivilents (FTEE). For the coming fiscal year, it is estimated that an additional $109 million will be needed to maintain staffing at the FY 1988 level, mainly due to mandated payroll increases; otherwise, the pay raise for the medical care staff would have to be absorbed through reduced program funds. Moreover, inflation and other uncontrollable costs have further increased the FY 1989 current service level by approximately $311 million. Thus, Congressional policy makers should operate from a FY 1989 current services budget of $10.54 billion.

o Specific Program Enhancements

The Friends of VA Medical Care and Health Research believe that above the current service level, additional funding must be targeted towards areas of critical need, including the following:

Increase the number of Geriatric Research Education and Clinical Centers (GRECCs) from 12 to 16, at an increased appropriation of $10 million. GRECCs are designed to advance geriatric and gerontological research and education in a clinical setting, and to assist the integration of geriatric care into the total VA system. An expanded GRECC program would not only allow the VA medical care system to maintain its leadership role in dealing with the health care problems of the aging, but also foster new approaches to care. Public Law 99-166 mandated that the number of GRECCs increase to 25; an additional $10 million would allow a first step to be taken towards this goal.

Increase funding by $11 million for education and training in critical shortage areas. Through its affiliations with schools of medicine, dentistry and other health professions, the VA constitutes the nation's largest single provider of health professions training. The Friends of VA Medical Care and Health Research endorses the increase of 200 FTEE for nursing and allied health traineeships, medical and dental residency positions, and physician fellowships called for in the Independent Budget. The medical residencies should be targeted towards areas of shortage such as anesthesiology, rehabilitative medicine, and psychiatry. Moreover, this initiative will assist in attracting and retaining staff physicians to the VA by providing an environment that includes clinical education.

Provide additional funds to support increased workload due to treatment of AIDS patients. The VA has cared for seven percent of the nation's AIDS cases documented between 1981 and 1986. By the end of 1987, new admissions of AIDS patients were averaging 200 per month. The VA reports that the costs of treating AIDS patients vary from $18,000 to $32,000 depending on whether AZT therapy is utilized. There is a critical need to provide adequate funds for the treatment of AIDS patients at the VA. We believe the additional costs associated with the care of AIDS patients should be carefully assessed each year.

Provide funds to develop programs to combat the shortages of nurses and other health professionals in the VA system. The entire US medical care system is facing an increasing shortage of health professionals in a number of fields -- especially nursing -- and the VA is no exception. The federal government has recently predicted a national shortage of 1.2 million RNs by the year 2000. The VA health care system must be provided with the resources to create an environment that will attract skilled health professionals by providing opportunities for professional growth.

RECOMMENDATION FOR FY 1989

Along with the organizations supporting the Independent Budget, the Friends of VA Medical Care and Health Research recommend an appropriation for FY 1989 of $10.82 billion. We believe that this proposal will be adequate to meet the ongoing medical care needs of our nation's veterans and respond to new challenges facing the VA health care system, while recognizing the need for fiscal responsibility. This is summarized below.

MEDICAL CARE
(in billions)

FY 1988 Appropriation	FY 1989 Current Services	FY 1989 Recommendation
$10.12	$10.54	$10.82

THE BENEFIT TO VETERANS

The quality of care provided to veterans in VA medical centers around the country is significantly enhanced by the presence of medical, rehabilitation, and health services research programs. These programs serve to attract to the VA distinguished physician scientists who not only engage in research activities but also provide medical care to veterans. Research performed in the VA by M.D. and Ph.D. scientists has lead to improvements in the diagnosis, treatment and prevention of a number of diseases and disorders:

- A VA researcher in New Orleans received the Nobel Prize in medicine for studies of the control of hormones released by the pituitary.
- The Nobel Prize in medicine was presented to a scientist at the Bronx VA Medical Center for the development of the use of radioimmunoassays in

diabetes research. This technique is now used in the diagnosis and treatment of a host of diseases.

- A study involving VA medical centers across the country played an integral role in the recently publicized discovery that low doses of aspirin can reduce the incidence of heart attack among men.
- A similar study was the first to provide a link between drug treatment for hypertension and prevention of stroke and heart attack. A VA researcher in Washington, D.C. received the Lasker Foundation's Basic Medical Research Award for his work on this study.
- A VA researcher at the Los Angeles VA Medical Center received the Lasker Award for discoveries leading to the development of CT scanning -- a powerful technology for the diagnosis and management of brain disorders.
- With funding from the VA health services research program, a physician at the Palo Alto VA Medical Center developed a reliable method for determining the nesessity of tests in patients complaining of chest pain.
- The VA rehabilitation research program has been responsible for many of this nation's developments in artificial limbs and other prosthetics over the past 30 years. In 1979, researchers at the Tucson VA Medical Center reported the development of a new approach in rehabilitation of amputation patients. This technique, now used in a number of VA Centers around the country, has significantly reduced the average length of hospital stay for these patients and resulted in multi-million-dollar cost savings for the VA.

These are just a few examples of important discoveries made by VA researchers which have resulted in improved health care for veterans and, moreover, have benefited the population at large.

Current VA research efforts continue to focus primarily on the diseases and disabilities that most commonly afflict the veteran population. Examples of such research include studies of:

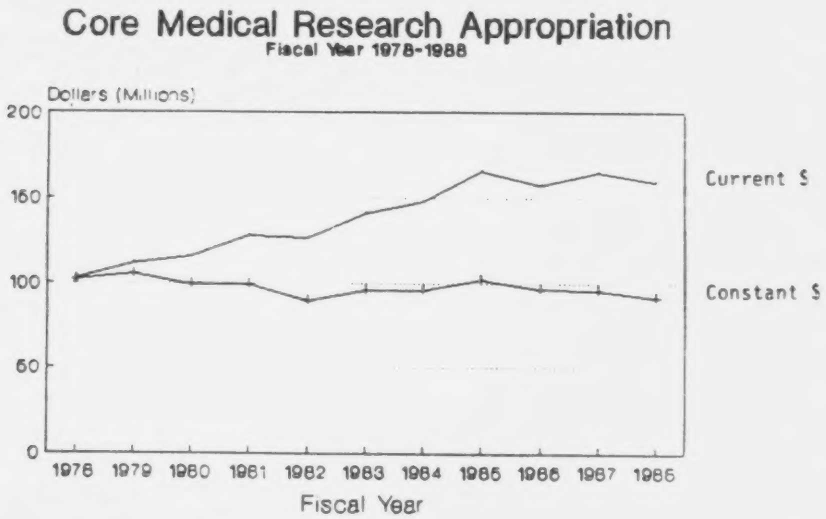
- the medical problems of the elderly, including osteoporosis, hip fractures, susceptibility to infection, and muscle deterioration
- Alzheimer's disease, which, absent a research breakthrough, is expected to afflict tens of thousands of veterans by the year 2000
- arthritis
- various forms of cancer
- crippling spinal cord injuries and neurological disorders such as epilepsy, Parkinsonism, and Huntington's disease
- diabetes and the long-term effects of insulin treatment
- kidney disease and acute renal failure requiring dialysis
- heart disease, hypertension, and malfunctions of the circulatory system
- blood disorders including sickle cell anemia
- digestive diseases
- lung diseases including emphysema

In addition, the VA, which will care for over seven percent of this country's AIDS patients during 1988, supports research on AIDS including studies on the drug treatment known as AZT.

Adequately funded, these research activities have enormous potential not only to improve the health of veterans and the population at large but also to reduce health care costs.

RECENT FUNDING CONSTRAINTS - LOST OPPORTUNITIES:

In recent years, the Congress has committed funds that have provided for slow but steady growth for two of the three VA research programs. Since 1985, funding for the VA rehabilitation and health services research programs has increased moderately. Unfortunately, during the same period, funding for the VA medical research program has declined by four percent. In addition, as shown on the next page, there has been a decline in the spending power of the medical research budget (as measured by constant dollars) over the last ten years.

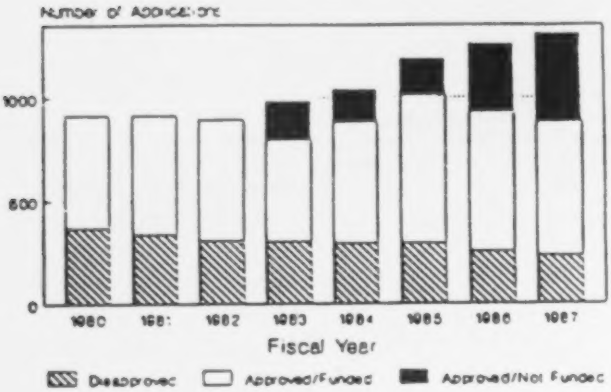


This reduction in support, coupled with the increasing costs of the overall conduct of medical research, has weakened the VA's medical research effort. Moreover, this situation has been significantly exacerbated by mandated pay raises and contributions to the Federal Employee Retirement System that were not separately funded through appropriations. Thus, funding for these two items has been taken out of the overall research budget. The impact has been most dramatic for the merit review program, which funds a significant portion of VA medical research proposals.

- The number of VA merit review awards has dropped from 718 in FY 1985 to a projected level of 573 for FY 1988.
- The percentage of programs approved and funded by VA merit review boards (panels of scientific experts) has dropped from 80 percent in FY 1985 to 60 percent last year. It is projected that this percentage will drop to just under 50 percent for the current year. This means that more than half of the research proposals judged to merit VA support will go unfunded this year.

This change in the VA's ability to fund meritorious medical research proposals is illustrated on the next page. As depicted, funding provided to the VA has been unable to keep pace as the number of research opportunities has grown in recent years. In 1982, the VA supported 100 percent of the proposals approved by merit review boards; since 1983, however, the number and percentage of approved but unfunded projects has steadily increased.

Merit Review Applications
FY 1980-FY 1987



In the short run, constraints on the VA's ability to support meritorious research proposals will serve to discourage medical researchers -- including physicians -- from careers in the VA. In the long run, unfunded research projects will translate into lost opportunities and discoveries that could lead to dramatic improvements in medical care.

RECOMMENDATION FOR FY 1989

The Friends of VA Medical Care and Health Research recommend a total FY 1989 VA research budget of $235.6 million. This represents an increase of 22 percent over the FY 1988 appropriation.

MEDICAL RESEARCH
(in millions)

	FY 1988*	FY 1989 Recommendation
Medical Research	$ 159.2	$ 200.8
Rehabilitation Research	$ 20.5	$ 22.0
Health Services Research	$ 8.2	$ 10.0
CDC-Agent Orange Study	$ 2.6	$ 2.8
Special Epidemiological Study	$ 2.4	n/a
TOTAL	$ 192.9	$ 235.6

*does not include transfers

It is important to recognize that funding at this level will allow the rehabilitation and health services research programs to continue moderate growth. Further, it will only restore the medical research program to its FY 1985 level of effort, thus recapturing losses sustained in the last three fiscal years. Specifically, the Friends of VA Medical Care and Health Research proposal would:

- Support 1,840 total research projects, the same number funded in FY 1985. Unfortunately, a significant percentage of meritorious research applications would continue to go unfunded under this recommended budget.

- Fund twenty-six cooperative studies, the same number supported in FY 1985.

- Support two hundred individual career development awards, again, the number funded in FY 1985. This program supports the training of future investigators, a critically important effort given documented personnel shortages in some areas of health research.

Under this recommendation, only two activities would be expanded over the current year:

o A $4 million increase above current services is recommended for the Special Initiatives program, which targets support to areas of critical need such as AIDS, spinal cord regeneration, geriatrics, alcoholism, and schizophrenia. Of particular importance, this increase will provide full funding for six AIDS research centers and additional research projects on AIDS.

o A $3 million increase above current services is recommended to support the purchase of high tech research equipment.

The Friends of VA Medical Care and Health Research believe that an FY 1989 VA research budget of $235.6 million is necessary to continue current efforts in rehabilitation and health services research and to restore reductions in the medical research program. In addition, targeted increases are recommended for a limited number of programs of special importance to the VA. Funding at this level will strengthen the VA research program and enhance its ability to contribute significantly to the improvement of health care for veterans and the population as a whole.

ORGANIZATIONS IN SUPPORT OF FY 1989 PROPOSAL
May 9, 1988

Albert and Mary Lasker Foundation
Alliance for Aging Research
Alzheimers Disease and Related Disorders Association
American Academy of Dermatology
American Academy of Ophthalmology
American Academy of Orthopaedic
American Academy of Otolaryngology--Head & Neck Surgergy, Inc.
American Association of Colleges of Nursing
American Association of Colleges of Osteopathic Medicine
American Association of Colleges of Pharmacy
American Association of Directors of Psychiatric Residency Training
American College of Psychiatrists
American Dental Association
American Diabetes Association
American Federation for Clinical Research
American Gastroenterological Association
American Heart Association
American Lung Association
American Narcolepsy Association
American Physiological Society
American Psychiatric Association
American Society for Clinical Investigation
American Society for Clinical Nutrition
American Society for Gastrointestinal Endoscopy
American Society of Clinical Oncology
American Urological Association
Americans for Substance Abuse Prevention and Treatment
Association for Academic Surgery
Association for Surgical Education
Association of Academic Departments of Otolaryngology
Association of Academic Health Centers
Association of American Medical Colleges
Association of Behavioral Sciences
Association of Minority Health Professions Schools
Association of Orthopaedic Chairmen
Association of Professional Sleep Societies
Association of Professors of Dermatology, Inc.
Association of Professors of Medicine
Association of University Anesthetists
Association of University Professors of Neurology
Association of University Professors of Opthalmology
Association of University Radiologists
Digestive Diseases National Coalition
Endocrine Society
Epilepsy Foundation of America
National Association for Biomedical Research
National Association of State Universities and Land Grant Colleges
National Multiple Sclerosis Society
Paralyzed Veterans of America
Radiological Society of North America
Society for Neuroscience
Society of Academic Anesthesia Chairmen
Society of Critical Care Medicine
Society of University Otolaryngologists
Society of University Surgeons
Society of University Urologists
Surgical Infection Society

STATEMENT OF STUART F. SEIDES, M.D., PRESIDENT, NATION'S CAPITAL AFFILIATE, NATIONAL HEART ASSOCIATION, WASHINGTON, DC

MEDICAL RESEARCH SERVICE PROGRAM

Senator PROXMIRE. Dr. Seides?

Dr. SEIDES. I am Stuart Seides, a cardiologist in private practice and an associate professor of cardiology at George Washington University. I am president of the American Heart Association's Nation's Capital Affiliate.

It is my pleasure to offer the American Heart Association's comments and funding recommendation for the Veterans' Administration Medical Research Service [MRS] program.

Cardiovascular diseases remain this nation's No. 1 killer. These diseases are responsible for almost 1 million deaths each year. Currently, it is estimated that nearly 65 million Americans suffer from some form of cardiovascular disease.

In 1987, the total economic costs associated with cardiovascular diseases are estimated to be over $80 billion in direct medical expenses and lost output due to disability and death. However, we are making progress against these diseases.

From 1976 to 1986, the death rate from coronary heart disease has declined by 28 percent, and that from stroke has fallen by over 40 percent.

The VA Medical Research Service Program, and in particular its cardiovascular research support, make up only a small portion of the overall VA budget. However, we believe that it deserves the strong support of both the American Heart Association and the Congress. The administration's fiscal year 1989 budget includes $175.9 million for the VA MRS, a 7.1-percent increase over the fiscal year 1988 appropriation of $162.4 million.

COMPONENTS OF MRS PROGORAM

The following components of the MRS program are of greatest concern to the American Heart Association. First are investigator initiated studies. Under the President's budget, this program would receive an 8.2-percent increase.

Second, the Cooperative Studies Program. Under the President's budget, this program would receive a 2-percent increase. Key cardiovascular investigations under this program include a study comparing the efficacy of translumocoronary angioplasty with closely supervised medical treatment of patients with symptoms of aschemic heart disease; a study comparing the effect of medical and surgical treatment for stable anginapectoris; and a study to evaluate the role and carotid andoterectomy surgery, combined with aspirin, versus aspirin therapy alone, a new treatment of carotid artery disease.

Third, career development awards. Under the administration's budget, career development awards would be increased by 3.4 percent.

The President's budget includes increases for each of the program mechanisms described above. However, a 2.4-percent decrease in FTEE's has been proposed for the VA MRS Program.

AHA believes that these proposed reductions in research personnel are short-sighted in light of the VA's requirement to prepare for future needs of veterans. By the year 2000, the percentage of veterans over 65 years of age will be about three times that of the general population.

The emphasis of VA cardiovascular research is largely clinical in nature. In fact, the VA is a major contributor to this nation's clinical research. Thus, the VA assumes the unique role in the research community because of its ability to immediately translate basic research findings into the clinical practice setting.

Moreover, the VA medical system has provided at least a part of the training of many of our leaders in cardiovascular medicine and research, myself included. Although the President's budget includes an increase for the VA MRS Program, we do not believe that it supports adequate growth.

We recommend a fiscal year 1989 appropriation of $200.8 million. This amount would allow for an overall increase of 22 percent over the fiscal year 1988 appropriation for the biomedical research activities of the VA.

It will also help to ensure continuation of current research momentum in cardiovascular diseases within the VA and assist in maintaining its vital role in the overall scientific effort in this field.

I thank you for the opportunity to appear before this subcommittee.

Senator PROXMIRE. Thank you very much, Dr. Seides.

[The statement follows:]

STATEMENT OF STUART F. SEIDES, M.D., PRESIDENT, NATION'S CAPITAL AFFILIATE, AMERICAN HEART ASSOCIATION

Good morning Mr. Chairman and Members of the Subcommittee, I am Stuart Seides, cardiologist in private practice, associate professor of cardiology at the George Washington University and President of the American Heart Association's (AHA) Nation's Capital Affiliate. I appear today on behalf of the AHA, our 55 affiliates and over two million volunteers. It is my pleasure to offer the following comments and funding recommendation for the Veterans Administration's Medical Research Service (MRS) program.

The AHA is the only voluntary agency in the United States devoting all of its human and financial resources to one goal: the reduction of premature death and disability due to cardiovascular diseases i.e., heart attack, stroke and other blood vessel diseases. In reaching this end, we work closely with Federal research, education and prevention programs whose objectives are similar to ours.

Cardiovascular diseases hold the deadly distinction of being America's number one killer -- a death occurs every 32 seconds. In 1985, heart and blood vessel diseases killed nearly one million Americans; almost as many as cancer, accidents, pneumonia, influenza, and all other causes of death combined. Cardiovascular diseases are responsible for almost one million deaths each year. Currently, it is estimated that nearly 65 million Americans - more than one in four - suffer some form of cardiovascular disease - over 59 million Americans have high blood pressure, approximately 4.9 million have coronary heart disease; and about 2 million individuals have suffered a stroke.

Make no mistake, cancer and other diseases are a real threat; but it is important to keep things in perspective. In 1985, about 460,000 Americans died of cancer. In 1986, nearly 6,100 Americans died of AIDS. These deaths are tragic, but the tragedy is compounded if our attention is focused on these disorders at the expense of a disease that claims now more than twice as many victims.

In 1987, the total economic costs associated with cardiovascular diseases are estimated to be over $80 billion in direct medical expenses and lost output due to disability and death. However, there is encouraging evidence that we are making progress against these disorders. From 1976 to 1986, the death rate from coronary heart disease has declined by 27.9% and that from stroke has fallen by 40.2%.

This downward trend is directly related to the increased focus on the prevention of cardiovascular diseases by controlling its risk factors, and most importantly, to remarkable research breakthroughs in the cardiovascular field, and to the translation of these important findings into clinical practice. These research advances not only save lives but also improve medical treatment of patients with cardiovascular diseases.

AHA has always given research its top priority. Since 1949, we have invested more then $691 million in research. The size of this financial commitment makes the AHA second only to the federally sponsored National Heart, Lung and Blood Institute (NHLBI) in the amount contributed to cardiovascular research. However, our battle against cardiovascular diseases depends on the level and quality of overall support of basic and clinical research and prevention efforts. While we continue to devote a larger portion of our resources for research, AHA cannot win this fight alone. Sufficient funds for federal biomedical research are critical.

The Veterans Administration's Medical Research Service (MRS) program, and in particular its cardiovascular research support, makes up a small portion of the overall VA budget; however, we believe that it deserves the strong support of both the AHA and the Congress. In 1987, the MRS spent about 7% of its budget on cardiovascular research. Although the mission of the VA health care system is the provision of high quality medical care to the veteran patient, its research is part of this Nation's total biomedical research system. Discoveries from VA supported research benefit science and this entire country's health.

Each year, a number of the VA's 2,600 investigators at its 172 VA centers across the United States have been honored with national awards. Several examples follow. Recognizing the significance of the VA's research, in 1986 the AHA honored Dr. Brian B. Hoffman, an investigator at the Palo Alto VA Medical Center with our prestigious Established Investigator Award for work on regulation of blood vessels to adrenaline and noradrenaline which dramatically effect the heart and circulation. In addition, Dr. Aaron J. Marcus, with the New York City VA Medical Center received the 1987 Middleton Award. He received this honor for his pioneering status of the mechanisms of blood clotting and intravascular thrombosis. Also, he has done work on natural inhibitors of clotting in the treatment of stroke and coronary artery disease.

AHA is concerned about the Congressional support for the MRS. During the FY 1988 appropriations process, Congress reduced the President's request for the MRS by $7.7 million. This included not only a reduction for the MRS to comply with the economic summit between Congress and the President but also a transfer of funds to another component within the Medical and Prosthetic Research appropriations.

The Administration's FY 1989 budget includes $175.9 million for the VA MRS, a 7.1% increase over the FY 1988 appropriation of $164.2 million. (It should be noted that this FY 1989 Presidential request is only a 2% increase over his FY 1988 request.) The President's budget includes an increase of $11.6 million for the MRS but a total decrease of 95 FTEE--122 from investigator-initiated studies. Moreover, the programmatic increases for the MRS are largely due to an increase to its AIDS program. While research into the cause, cure and prevention of AIDS must continue, other research efforts within the MRS must not be put on hold. Moreover, AHA believes that the proposed reductions in research personnel are short-sighted in light of the VA's requirement to prepare for future needs of veterans. VA's planning models recognize that its aging patient population demands more care. By the year 2,000 the percentage of veterans over 65 years old will be about three times that of the general population (37% compared with 13%, respectively).

The following components of the MRS program are of concern to the AHA:

- o Investigator - Initiated Studies: This program supports approximately 2,000 investigators and constitutes about 70% of the MRS budget. Under the President's budget, this program would receive an 8.2% increase but a reduction of 122 FTEE. AHA's philosophy on these personnel reductions were described above.

- o Cooperative Studies Program: Currently, this program supports 25 clinical trials. These studies, unique to the VA, provide a mechanism where the effectiveness of diagnostic or therapeutic techniques can achieve statistically significant results by pooling data on patients from a number of VA hospitals. Under the President's budget, this program would receive a 2% increase. Key cardiovascular investigations under this program include: a study comparing the efficacy of percutaneous transluminal coronary angioplasty (PTCA) with closely supervised medical treatment of patients with symptoms of ischemic heart disease; a study comparing the effects of medical and surgical treatment for stable angina pectoris; and a study to evaluate the role of carotid endarterectomy combined with aspirin versus aspirin therapy alone in the treatment of carotid stenosis.

- Career Development Awards: this program supports approximately 215 clinical scientists who spend the majority of their efforts on medical research. This program is a highly competitive and only 35-40% of the approved applications can be funded. Under the Administration's budget, career development awards would be increased by 3.4%.

Some key additional areas of cardiovascular research in which the VA is working include:

- study to determine what may produce or correct ventricular fibrillation-the major cause of sudden cardiac death.
- investigation into the effect of myocardial ischemia on ion transport properties of the cell surface membrane.
- evaluation of left ventricular systolic performance with doppler echocardiographic recordings.
- assessment of laser parameters in achieving safe and effective laser angioplasty to widen narrowed arteries.

Other areas of investigation include the effect of alcohol on the heart muscle; study of the involuntary nervous system's influence on the heart function; and evaluation of how strain stimulates growth of the heart muscle.

The emphasis of VA cardiovascular research is largely clinical in nature. In fact, the VA is a major contributor to this Nation's clinical research. Thus, the VA assumes a unique role in the research community because of its ability to immediately translate basic research findings into the clinical practice setting.

Although the President's budget includes an increase for the VA MRS program, we do not believe that it supports adequate growth. Therefore, we recommend a FY 1989 appropriation of $200.8 million for the VA Medical Research Service program. An appropriation of this amount will allow for an overall increase of 22% over the FY 1988 appropriation for the biomedical research activities of the VA. This figure would only restore the MRS to its FY 1985 level of effort with moderate growth to support two areas: the Special Initiatives program which targets areas of critical need such as AIDS, spinal cord regeneration, geriatrics, alcoholism, and schizophrenia; and the purchase of high tech research equipment. Our funding recommendation for the VA MRS is consistent with that of the "Friends of VA Medical Care and Health Research."

The American Heart Association (AHA) firmly believes that today's investment in biomedical research will lead to future returns--further decreases in death rates due to coronary heart disease and stroke; reduced federal outlays for hospital and long-term care expenses; a well-trained cadre of biomedical researchers; and a more healthy and productive society. A 22% increase in VA research funds would continue current research momentum in cardiovascular diseases within the VA and assist in maintaining the VA's vital role in the overall scientific effort in this field.

Thank you for this opportunity to appear before your Subcommittee and I will be happy to answer any questions.

STATEMENT OF JOHN T. FARRAR, M.D., PRESIDENT, DIGESTIVE DISEASE NATIONAL COALITION, WASHINGTON, DC

MEDICAL RESEARCH PROGRAM

Senator Proxmire. Dr. Farrar?

Dr. Farrar. Mr. Chairman and members of the subcommittee, I am very pleased to appear before you to discuss the medical research program administered by the VA. I represent the Digestive Disease National Coalition, a coalition of 22 national voluntary and professional organizations representing more than 110,000 individual and corresponding members.

The purpose of this coalition is to foster the continued development of federal efforts to combat digestive diseases and related nutritional disorders. I serve as president of this organization.

Mr. Chairman, I am also a professor of medicine at the Medical College of Virginia and chief of staff of the VA Medical Center in Richmond, Va., which provides me with considerable knowledge of the VA research program.

Needless to say, I took a day of annual leave to appear before you as a private citizen because I believe firmly that it is very important to continue a strong and viable medical research program within the VA. My comments do not, therefore, necessarily represent the views of the Department of Medicine and Surgery.

Disease of the digestive organs—the esophagus, stomach, small and large intestines, et cetera—are very common, both in VA hospitals and in the private sector. The economic and human costs are in my written testimony.

BENEFITS OF HEALTHY VA MEDICAL RESEARCH PROGRAM

In my remarks today, however, I do not want to focus primarily on digestive diseases, but rather on the entire VA medical research program. The importance of a vigorous and healthy VA medical research program to all of us in medicine is as follows.

(1) The ready availability of VA research funding is essential for the recruitment and retention of first quality physicians to the VA. This is particularly important to us because of the high incidence of gastroen-

terologic diseases in the VA population, which has resulted in a large fraction of academic gastroenterologists and GI trainees being associated with the VA.

(2) The connection between outstanding research and outstanding patient care in the VA is clear. The most prestigious clinical centers in the system are among those with the highest research funding.

(3) While it covers the spectrum for basic research to clinical application, the VA research effort is preeminently a patient-oriented research program, the largest such program extant. For those interested in studying actual clinical conditions, the VA program is preeminent.

VA research is the last preserve of the clinician principal investigator. While a fraction of M.D. principal investigators on NIH grants has become alarmingly small, the fraction of M.D. principal investigators under VA merit reviews has remained a healthy two-thirds of the total.

We feel that preservation of the M.D. investigator is essential to the future of patient-oriented research in this country.

STIMULUS PROVIDED BY VA RESEARCH PROGRAM

Mr. Chairman, research programs in the VA serve as a major stimulus for many bright clinicians and scientists to stay with the Veterans' Administration, rather than seek more financially rewarding opportunities outside the VA.

Intellectual stimulation in a research and patient care setting is the vital component in the career development of a young physician investigator.

There are ominous trends which have been noted recently by the coalition that you just heard about. For the last 3 years, there has been a steady increase in the number of research grants which are approved—good research—but not funded. This year less than half of the approved projects will be funded.

Failure to have a meritorious research funded will discourage the best young physicians, and they may leave the VA system forever.

DROP IN VA MERIT AWARDS

The number of VA merit awards has dropped from 718 in fiscal year 1985 to a projected level of 573 in fiscal year 1988.

The Digestive Disease National Coalition recognizes the difficult fiscal problems that are facing your subcommittee this year and every year, yet we urge that you give every consideration to providing adequate levels of funding for the medical research programs within the VA.

I assure you it represents a good investment. The amount of money is relatively small, but absolutely crucial to the viability of the entire VA health program.

In conjunction with major voluntary and professional medical societies supporting VA research, the Digestive Disease National Coalition recommends $201 million be appropriated for VA medical research and that the entire program for health services and medical research be funded at $236 million.

I am pleased to respond to your questions.

Senator PROXMIRE. Thank you very much, Dr. Farrar.

[The statement follows:]

STATEMENT OF JOHN T. FARRAR, M.D., PRESIDENT, DIGESTIVE DISEASE NATIONAL COALITION

Mr. Chairman, and members of the Subcommittee, I am very pleased to appear before you to discuss the medical research program administered by the Veterans Administration.

The Digestive Disease National Coalition (DDNC) is comprised of 22 national voluntary and professional organizations representing more than 110,000 individual and corresponding members. The purpose of this important coalition is to foster the continued development of federal efforts to combat digestive diseases and related nutritional disorders. I serve as President of the DDNC. Mr. Chairman, I am also Chief of Staff at the VA Medical Center in Richmond, Virginia, which provides me with considerable knowledge of the VA Research program. I took a day of annual leave to appear before you, as a private citizen, because I believe firmly that it is very important to continue a strong and viable Medical Research program within the Veterans Administration. My comments do not represent the views of the Department of Medicine and Surgery.

Digestive diseases exact an enormous toll in terms of disability, suffering, and economic costs. The incidence of chronic digestive ailments account for an estimated 200,000 absences from work each day, resulting in approximate costs of $50 billion each year in lost wages, reduced productivity, health care expenditures and disability payments. Digestive diseases account for the greatest number of hospital admissions (including VA hospitals), accounting for $17 billion a year in health care expenditures alone.

The digestive tract begins at the mouth and ends at the rectum. In between are a number of organs such as the esophagus, stomach, liver, pancreas, gallbladder, and the small and large intestines. Each of these organs are vital to sustain one's existence. Many, many serious illnesses from an occasional stomachache, to inflammatory bowel disease, various liver diseases, hemorrhoids, ulcers, and cancer of any of these organs can severly disable individuals of any age. Complications resulting from digestive disorders are a leading cause of death in this country. Among the Veterans Hospital patient population, digestive disease diagnoses represent a major portion of admissions.

The importance of a vigorous and healthy V.A. Medical Research effort to us of the DDNC has several aspects:

(1) The ready availability of V.A. Research funding is essential for the recruitment and retention of first quality academic physicians to the V.A. This is particularly important to us because of the high incidence of gastroenterologic diseases in the Veteran population, which has resulted in a large fraction of academic gastroenterologists and of GI trainees being associated with the V.A.

(2) The connection between outstanding research and outstanding patient care in the V.A. is clear. The most prestigious clinical centers in the system are among those with highest research funding.

(3) While it covers the spectrum from basic research to clinical application, the V.A. Medical Research effort is preeminently a patient-oriented research program, the largest such program extant. For those interested in studying actual clinical conditions, the V.A. program is preeminent.

(4) V.A. Research is the last preserve of the clinician principal investigator. While the fraction of M.D. principal investigators on NIH grants has become alarmingly small, the fraction of M.D. principal investigators on V.A. Merit Reviews has remained a healthy 2/3 of the total. We feel the preservation of the M.D. investigator is essential to the future of patient-oriented research in this country.

(5) The research effort produces some of the V.A.'s most favorable public relations. I am referring not only to the small number of Nobel Prize and Lasker Award winners, but to the broad sweep of quality research which characterizes the V.A.

Mr. Chairman, the research programs within the VA also serve as a major stimulus for many bright clinicians and scientists to stay with the Veterans Administration, rather than seek more financially rewarding opportunities outside the V.A. Intellectual stimulation in a research and patient care setting is a vital component in the career development of a young investigator.

Among the meritorious research projects being conducted through the VA in the area of digestive disease are:

- The Gastrointestinal Mucosa in AIDS. In this study it was demonstrated that epithelial lymphocytes in AIDS were clearly "activated" and that this occurred regardless of the presence or absence of GI pathogens. These observations imply that the epithelial lymphocyte may serve as a cytotoxic effector in the production of GI immune injury in patients with AIDS and with celiac sprue.

- The Effect of Urea Cycle Enzyme Induction on Urea Synthesis Rate in Cirrhotic Rats. Studies in humans with cirrhosis of the liver suggest that rates of urea synthesis during administration of protein or amino acid loads are lower than in normal humans. These findings cast doubts on the postulated urea cycle defect in cirrhotic humans unless they have active liver cell damage (i.e., alcoholic hepatitis) or have very severe cirrhosis.

- Markers of Premalignant Mucosa. These studies are primarily related to high risk colonic mucosa in an animal model of colon cancer as well as in the human disease and in Barrett's epithelium of the esophagus which is also a premalignant mucosa. Reliable identification of premalignant mucosa markers of individuals at high risk for the development of either colonic or esophageal cancer should allow effective screening.

There are ominous trends which have been pointed out recently by another coalition, Friends of VA care and Health Research:

(1) For the last 3 years there is a steady increase in the number of research grants which are approved but not funded. This year less than half of the approved projects will be funded.

(2) The number of VA merit review awards has dropped from 718 in FY 85 to a projected level of 573 in FY 88.

The Digestive Disease National Coalition recognizes the difficult fiscal problems that are facing your Subcommittee this year and every year. Yet, we urge that you give every consideration to providing adequate levels of funding for the medical research programs within the Veterans Administration. I assure you, it represents a good investment. The amount of money is relatively small but absolutely crucial to the viability of the entire V.A. program.

In conjunction with major voluntary and professional medical societies supporting VA Research, the Digestive Disease National Coalition recommends $201 million be appropriated for VA Medical Research, and that the entire program for Health Services and Medical Research be funded at $236 million.

I am pleased to respond to your questions.

STATEMENT OF THOMAS F. FERRIS, M.D., PRESIDENT-ELECT, ASSOCIATION OF PROFESSORS OF MEDICINE

Senator PROXMIRE. Dr. Ferris?

Dr. FERRIS. Mr. Chairman, I am Dr. Thomas Ferris, and I am here on behalf of the Association of Professors of Medicine, an organization that represents the chairmen of the departments of medicine at the nation's 127 schools of medicine. I am chairman of the Department of Medicine at the University of Minnesota and president-elect of the association.

The affiliation that exists today between our veterans' hospitals and our medical schools was created in 1946 to serve the needs of veterans returning to VA hospitals at the completion of World War II. Today, 133 of the 172 VA medical centers are affiliated with 101 medical schools. The University of Minnesota is one of these affiliated universities.

The Association of the Professors of Medicine is vitally interested in the continued viability of VA hospitals and their staffs who are members of our faculties, and VA hospitals play an important role in the training of our medical students and residents.

At the University of Minnesota, more than one-third of the clinical teaching in medicine is provided at the Minneapolis VA Hospital. This is true at many medical schools because teaching and patient care at VA hospitals is comparable with that of our other teaching hospitals.

Maintenance of excellence in patient care and teaching is dependent upon the continued high-quality medical staff attracted to the VA system.

Although I wish to speak primarily on the appropriation for medical research in the VA system, I would like to alert members of this committee to another matter which will have a great impact on funds to maintain the level of patient care in the VA over the next several years.

WORKING CONDITIONS OF MEDICAL RESIDENTS

In response to state legislative concerns about working conditions of medical residents and to improve the educational quality of residents in training, the Residents in Review Committee in Internal Medicine has recently developed a draft proposal which would limit both the number of hours that a resident in internal medicine would be permitted to work and the number of patients the resident should handle.

The draft suggests now a limit for a first-year resident of 6 to 10 patients and a limit on new patients over a 24-hour period of 2 to 4. Medical residents in all VA hospitals now handle patient caseloads far greater than these.

Even if these recommendations are increased slightly, the consequence of these recommendations will be that VA hospitals, to be part of an approved residency in internal medicine, must increase its number of medical residents, which is going to be a most difficult task since fewer students are entering internal medicine or employ additional full-time physicians to care for patients now being cared for by residents.

CLINICAL RESEARCH

To get back to the matter I primarily wanted to speak of, research, this has been traditionally one of the main attractions of a career in the VA for staff physicians. Young physicians interested in careers in academic medicine have historically found in the VA the opportunity of combining patient care with clinical research.

We in academic medicine are convinced that the best medical care is provided in an environment where medical research thrives. Thus, we are concerned about the recent cutbacks in appropriation for research in the VA since such a policy will lead ultimately to an adverse effect upon the ability to recruit academic physicians to the VA system.

Although the VA medical research appropriations have doubled from $80 million to $165 million between 1975 and 1987, in constant 1977 dollars the appropriations decreased to $78 million. In 1975, the VA medical research budget was 2.5 percent of VA medical care expenditures, where in 1987 it has fallen to 1.8 percent.

I presently serve on the National VA Career Development Committee and can attest to the high-quality research proposals that cannot be funded. Last year, approximately 50 percent of approved VA grants were funded; and this year, the figure will be closer to 33 percent.

The recent mandated federal pay raise and retirement plan increase, which was not accompanied by increase in research funds, resulted in a net 3.5-percent withdrawal of research funds, which was coupled with a 5-percent across-the-board reduction in VA research funding.

Although these percentages seem small, they are of great impact on research programs. As an example of how sensitive research funding is to budgetary change, of the $5.3 million in the competitive funding awarded to the Minneapolis VA Hospital, 80 percent is fixed for investigative salaries. Only $1 million is provided for nonsalary funds.

Thus, the appropriation reduction and mandated pay raise and increase in retirement plan resulted in a $265,000 out of $1 million reduction in nonsalary funding. These monies, necessary for the supplies and technical help needed to do the research, were thus reduced approximately 20 percent.

I am attaching to this testimony a letter from Dr. Fred Wright, a professor of medicine at Yale, concerning similar impact of these budget cuts at the Westhaven VA.

The Association of Professors of Medicine supports a sizable increase in VA medical——

Senator PROXMIRE. Doctor, could you sum up in about a minute or so?

Dr. FERRIS. Yes; I will. We endorse the conclusions of the Friends of VA Medical Care and Health Research that, for fiscal year 1989, the appropriation should be $235.6 million. Thank you.

Senator PROXMIRE. Thank you very, very much.

Gentlemen, this is excellent testimony. I particularly thank you for pointing out the teaching function of the Veterans Administration. I think very few Members of Congress appreciate fully how important that is and what a good investment this is.

At the same time, with the fiscal pressure we are under, we will do the best we can. Thank you very much.

[The statement follows:]

STATEMENT OF THOMAS F. FERRIS, M.D., PRESIDENT-ELECT, ASSOCIATION OF PROFESSORS OF MEDICINE

The Association of Professors of Medicine supports the recommendations of the Friends of VA Medical Care and Health REsearch for a total medical research appropriations for the Veterans Administration for fiscal year 1989 of $235.6 million. We are convinced that the best medical care is provided in an environment where medical research thrives. A continued erosion in research funding in the VA system will make the VA system less attractive to physicians interested in academic careers. Opportunities for research have traditionally been one of the attractions of a career in the VA system. Young physicians interested in careers in academic medicine have historically found in the VA the opportunity of combining patient care with clinical research.

We would also like to alert this subcommittee to recommended changes in the case load of residents in internal medicine which will have an impact on the funds needed to maintain high levels of patient care in the VA system. Recommendations now under review in internal medicine and several state legislatures call for a reduction in the number of patients a resident should handle -- both total patients and the number of new patients for whose admission the resident is responsible. Most residents in VA hospitals now handle case loads far greater than these. The cost of medical care in the VA system will rise if the VA is to keep pace with the agreed-on standards of care in the rest of our nation's hospital system.

Mr. Chairman, I am Dr. Thomas F. Ferris and I am here on behalf of the Association of Professors of Medicine, an organization that represents the chairmen of Departments of Medicine at the nation's 127 schools of medicine. I am Chairman of the Department of Medicine at the University of Minnesota and President-Elect of the Association.

Mr. Chairman, we appreciate the past support of this committee to medical care and to important medical research within the VA system.

The affiliation that exists today between our veterans hospitals and our medical schools was created in 1946 to serve the needs of veterans returning to VA hospitals at the completion of World War II. Today 133 of the 172 VA medical centers are affiliated with 101 medical schools: the University of Minnesota is one of these affiliated universities.

The Association of Professors of Medicine is vitally interested in the continued viability of VA hospitals since their staff are members of our faculties and VA hospitals play an important role in the training of our medical students and residents. At the University of Minnesota more than 1/3 of the clinical teaching in medicine is provided at the Minneapolis VA Hospital. This is true at many medical schools because teaching and patient care at VA hospitals is comparable with that of other teaching hospitals. Maintenance of excellence in patient care and teaching is dependent upon the continued high quality medical staff attracted to the VA system.

The Association of Professors of Medicine is here today primarily to speak on the appropriations for medical research in the VA system. However, I would like to alert members of this committee to another factor which will have an impact on the funds needed to maintain the levels of patient care in the VA in the next several years. The Residency Review Committee in Internal Medicine -- the group which develops standards on which residency programs are evaluated -- has developed draft proposals which would limit both the number of hours that a resident in internal medicine would be permitted to work and the number of patients the resident should handle. The draft suggests a limit for a first year resident of 6-10 patients and a limit on new patients for whose admission the resident is responsible in a 24 hour period of 2-4.

Most residents in VA hospitals now handle patient case loads far greater than these. Even if these limits are increased slightly, the consequence will be that a VA hospital which maintains an approved residency in internal medicine will be required either to add to its housestaff or to employ additional full-time physicians to care for patients now being cared for by residents. The costs of medical care in VA hospitals will rise significantly, if the VA is to keep pace with the agreed-on standards of care in the rest of our nation's hospital system. And of course, high quality young medical graduates will not be attracted to the VA system if the opportunities for continued education are overwhelmed, as is now so often the case, by patient care.

Opportunities for research have traditionally been one of the attractions of a career in the VA system. Young physicians interested in careers in academic medicine have historically found in the VA the opportunity of combining patient care with clinical research. We in academic medicine are convinced that the best medical care is provided in an environment where medical research thrives. Thus, we are concerned about the recent cutbacks in appropriations for research in the VA since such a policy will lead ultimately to an adverse effect upon the ability to recruit academic physicians to the VA system.

Although the VA Medical Research appropriation has doubled from $80 million to $165 million between 1975 and 1987, in constant 1977 dollars the appropriation decreased to $78 million. In 1975 the VA Medical Research budget was 2.5% of VA medical care expenditures whereas in 1987 it had fallen to 1.8%. I presently serve on the national VA Career Development Committee and can attest to the high quality research proposals that can not be funded. Last year, approximately 50% of approved VA grants were funded and this year the percentage will drop to about 33%, whereas a few years ago the figure was closer to 80%. The number of VA Merit Review Awards has dropped from 718 in 1985 to a projected 573 in 1988. Also increased competition for grants usually results in priority being given to older established investigators. I am concerned that of the 65 investigators at the Minneapolis VA Hospital who receive merit review funds, only 6 are under 40 years old. Unless a greater proportion of the VA budget is committed to research, the attractiveness of the VA for clinical investigators will continue to fall.

The recent mandated federal pay raise and retirement plan increase, which was not accompanied by increase in research funds, resulted in a net 3.5% withdrawal of research funds and this was coupled with a 5% across-the-board reduction in VA research funding. Although these percentages seem small, they have great impact on research programs. As an example of how sensitive research funding is to budgetary change, of the $5.3 million in competitive funding awarded to the Minneapolis VA Hospital, 80% is fixed for investigators salaries. Only $1 million is provided for non-salary funds. Thus, the appropriation reduction and mandated pay raise and increase in retirement plan resulted in a $265,000 reduction in non-salary funding. These monies, necessary for the supplies and technical help needed to do the research was reduced approximately 20%. I am attaching to this testimony a letter from Fred S. Wright, M.D., Professor of Medicine at Yale University School of Medicine, outlining the similar impact of these budget cuts at the West Haven VA Hospital.

In addition reductions in research funding have an impact on specific medical problems seen in the veteran population. The VA emphasizes research in Geriatrics, Alzheimer's disease, lung diseases like emphysema and has pioneered research in physical medicine and rehabilitation so vital in the care of patients with chronic neurologic deficits. In addition over 7% of the nation's patients with AIDS are cared for in VA hospitals.

The Association of Professors of Medicine supports a sizable increase in the VA Medical Research budget in fiscal year '89. Specifically, we recommend that the core medical research budget be funded next year at $200.8 million. The appropriation of $200 million will restore VA research at the level of 1985. With modest increases in rehabilitation and health services research and continuation of the CDC study of agent orange, we support a total medical research appropriation for the Veterans Administration for fiscal year 1989 of $235.6 million. We endorse the conclusions of The Friends of VA Medical Care and Health Research, formed by several leading medical organizations, which has provided independent recommendations concerning the appropriations for VA medical care and health research. A continued erosion in research funding in the VA system ultimately will affect patient care by making the VA system less attractive to physicians interested in academic careers, which is one of their greatest assets.

Thank you.

LETTER FROM FRED S. WRIGHT, M.D., PROFESSOR OF MEDICINE, YALE UNIVERSITY

March 25, 1988

Robert M. Donaldson, M.D.
Deputy Dean
Yale University School of Medicine
New Haven, CT 06510

Dear Bob:

The fiscal year 1988 appropriation for VA research has done real injury to the research program at the West Haven VA Medical Center.

With 1/4 of the year over and with funds already committed to research programs, a two punch assault was delivered: a federal pay raise and a new, more expensive retirement plan (which together average about 3.5%, but for which no funds were provided); and a withdrawal (by VA Central Office) of 5% of funds already allotted (because congressionally appropriated funds were not sufficient to cover commitments already made).

Because about half of the West Haven research budget goes to pay salary costs for investigators and co-workers, the 5% cut and the 3.5% redistribution amount to a 17% cut in funds available for non-salary costs. This problem is illustrated by numbers for 44 of the research programs at the West Haven VA Medical Center:

In September 1987,

Total funds (not including P.I. sal)	$1,523,701
Salaries	775,582
Supplies	748,119

The pay raise and benefits increase moved $27,145 from supplies to salaries. The withdrawal required cutting an additional $95,993.

Therefore, in February 1988,

Total funds (not including P.I. sal)	$1,427,708
Salaries	802,707
Supplies	624,981

The total cut from supply funds that were available at the beginning of the fiscal year is $123,138, or 17%.

In some of the individual programs that require a higher proportion of personnel, the originally budgeted supply funds are not sufficient to cover these cuts. A number of investigators will lose the services of technicians and assistants who have been working with them on approved and funded projects.

These recent events highlight a problem that has been getting worse for years: there is not enough money in the VA research program nationwide to support the kind of research activity that is needed if the VA clinical and teaching programs are going to be valuable components of academic medical centers.

Between 1975 and 1987 the VA Medical Research appropriation doubled (from $80 to $165 million), however, in constant 1977 dollars the appropriation decreased (to $70 million).

The research program has been left behind as congressional budget cutting has been distributed within the VA. In 1975 the

VA Medical Research budget was 2.7% of VA Medical Care expenditures. I understand that around 1970 the fraction was as high as 4%. In 1987 Medical Research was down to 1.8% of VA Medical Care. The picture would be very different this year if the research appropriation was at the previous 4% level. I think that returning to a 4% share for research would be an identifiable and reasonable goal to target in attempts to convince congress that VA research needs more dollars.

Unless appropriations increase I expect that we will soon see that VA funds will be sufficient to pay only a small minority of applications. Nationally for the past 5 years about 50% of VA grant applications have been awarded funding. It appears certain that unless more dollars are available for VA research, fewer and fewer individuals will receive VA research support. Locally we are competing successfully for dollars in this shrinking pool, however, these trends will eventually also injure the Yale University School of Medicine faculty in the West Haven VA research program.

I would like to work with you to help make the case for increasing funds available for VA research. Please let me know if you need additional information.

Sincerely,

Fred

Fred S. Wright, M.D.
Professor of Medicine

STATEMENT OF RICHARD W. JOHNSON, JR., DIRECTOR OF LEGISLATIVE AFFAIRS, NON-COMMISSIONED OFFICERS ASSOCIATION OF THE UNITED STATES OF AMERICA

Senator PROXMIRE. I am going to ask a panel to come forward of Mr. Richard Johnson, with the Non-Commissioned Officers Association, and Mr. Samuel Walsh and Mr. John Sommer of The American Legion. If the three of you gentlemen would come forward together, I would appreciate it.

I understand, Mr. Johnson, that you have a separate testimony and that Mr. Walsh and Mr. Sommer are together.

Mr. JOHNSON. That is correct, Mr. Chairman.

ADDITIONS TO PRESIDENT'S BUDGET REQUEST

Mr. JOHNSON. Thank you, Mr. Chairman. I will attempt to be brief in my remarks this morning, understanding the time constraints of the committee. Fundamentally, the association has asked for certain additions to the President's budget request this year to accommodate various specific programs.

In summary, we have asked for increases in function 701 to expand the national cemetery system by 10 cemeteries, which would extend national access from 38 percent of the current veteran population to nearly 68 percent by serving major veteran population centers.

We have also asked for improvements in function 701 spending to provide funding for legislation pending on the President's desk now to compensate certain radiation survivors.

In section 702, the association has asked for improvements in funding for improvements in the Montgomery GI bill program, which would provide refunds of contributions made under that program to those who become disabled or to the survivors of those who are deceased while on active duty in the military service, and also provide an extension of GI education benefits to certain military retirees who will lose their entitlement on December 31, 1989, as a result of the expiration of the old GI bill.

This is a group of individuals who are caught in a vacuum between their Vietnam era GI bill entitlement and the Montgomery GI bill.

In function 703, the Non-Commissioned Officers Association is pleased to offer its endorsement to the independent budget of veterans' organizations, which was presented here earlier. Fundamentally, that would provide minor improvements above baseline spending in medical care and nursing care and medical construction programs. Those are outlined in my statement.

In function 705, the association is pleased to support a small increase of only $8 million to assure full-time equivalent employee staffing levels which would be sufficient to take care of the ever-growing need and a timeliness issue of addressing veterans' benefit claims.

LOAN GUARANTY PROGRAM

Coming back to function 704, the association extends to this committee its thanks for its efforts in recently adopting and sending to the President a supplemental appropriation to save the Veterans Administration Loan Guaranty Program, at least—as we understand it—hopefully through the course of this fiscal year, although there may yet be another shortfall.

There is also legislation pending in the Senate now to provide for the creation of a special panel to look over the Loan Guaranty Program and recommend some changes that may restore solvency or may not restore solvency in the loan guaranty revolving fund.

Unfortunately, the problems in the loan guaranty revolving fund go back to the early 1970's when the Veterans' Administration, under the instruction of the Office of Management and Budget, began liquidation of long-term assets in the fund, declaring surpluses, and returning that money to the Treasury for general use. That continues today.

Recently, the Veterans' Administration sold $219.3 million worth of loans for $220.5 million; that is 0.54 percent above par, but those loans were earning 0.79 percent per month. In other words, they sold for a profit of $1.2 million, $1.6 million in monthly income. And a program cannot long endure under those circumstances.

Our recommendation is that this committee prohibit loan sales in the future, unless they can be substantially above par, but moreover to rebuild the loan guaranty portfolio to such a point where it can again become self-sufficient. Using the $880 million the President has proposed in his revenue enhancements proposal on this loan guaranty program could start that loan guaranty revolving fund on a course of recovery.

Thank you, Mr. Chairman. That concludes my statement.

Senator PROXMIRE. Thank you, Mr. Johnson. I will certainly have a talk with Senator Cranston, who is chairman of the Veterans' Affairs Committee, and have our staffs look into the recommendation you have made and see if it will save money. If it will, I think that would be very worthwhile.

[The statement follows:]

STATEMENT OF RICHARD W. JOHNSON, JR., DIRECTOR OF LEGISLATIVE AFFAIRS, NON COMMISSIONED OFFICERS ASSOCIATION OF THE UNITED STATES OF AMERICA

Summary

	CBO Baseline	NCOA Recommendation	+/-
701	$15.571 Bil	$15.637 Bil	+$ 66 Mil
702	.402	.509	84
703	11.258	11.661	403
704	.428	1.308	880
705	.921	.929	8
	$28.580	$30.044	$1.441

NCOA supports VA spending at the levels proposed in the chart above.

Additions in function 701 are requested to fund cost-of-living adjustments in compensation and survivor benefits, improvements in the National Cemetery System, and improved burial benefits.

Function 702 additions are requested to fund improvements in the Montgomery G.I. Bill and vocational rehabilitation for disabled veterans.

Function 703 increases are requested to provide for additional nursing home construction, additional medical care staffing and improved access to VA medical care.

Additional spending in Function 704 is desired to regain solvancy in the VA loan guaranty program.

Function 705 increases are requested to assure proper staffing in veterans' benefits programs.

The Non Commissioned Officers Association of the USA (NCOA) is grateful for this opportunity to present its views on appropriations for the Veterans Administration in Fiscal Year 1989. The Association fully understands the actions of this committee will be driven by the need to balance spending and revenues within the parameters set by the budget resolution and the economic summit. At the same time NCOA recognizes the committee's ability to realign priorities and spending within those parameters. On that basis the Association pleads for veterans' benefits and services appropriations of $30.044 billion in fiscal year 1989. This figure represents an increase of less than $1.5 billion more than the Congressional Budget Office (CBO) baseline or current services budget. In other words, NCOA asks for a real growth in VA spending of 4.9 percent in FY 1989.

Function 700: Appropriations for veterans' benefits and services, known in government as Function 700 spending, have suffered substantially in recent years. As a percentage of Gross National Product VA spending has declined from nearly 1 percent in 1977 to .6 percent today. As a percentage of federal spending VA outlays have dropped from 3.6 percent in 1980 to 2.6 percent today. Looking only at medical care, spending for veterans represented 11.4 percent of federal spending in 1977 but has declined to 7.7 percent. While overall health care spending by the federal government has increased at a ratio of 178:1 since 1950, while federal education training, employment and social services spending have increased 155:1 and while social security outlays have increased 299:1, expenditures on behalf of veterans have risen only 3:1 during the same period.

Veterans will be the first to volunteer to pay their fair share, to make their appropriate sacrifice, to do their part to reduce federal spending. The evidence on this is clear. In recent years veterans have had cost-of-living adjustments in compensation and pensions capped at less than the measured increase in the consumer price index. Veterans have been forced to fund the loan guaranty program by paying fees for participation. Burial benefits have been curtailed for all but disabled and indigent veterans. Medical care has become a means tested program for most veterans and beneficiary travel payments have been cut substantially. Education benefits will soon expire for thousands of veterans who will not have enjoyed the traditional ten years allowed for the use of such benefits. Programs that have not been cut or curtailed have been allowed to suffer the ravages of inflation. Benefits for the vocational rehabilitation of disabled veterans have not been adjusted since October 1984 nor have education benefits for Vietnam era veterans or the survivors of deceased or disabled veterans. The few and recent improvements in insurance and housing programs have done little to offset the sacrifices and losses of veterans. NCOA believes it is time to reverse this trend.

Function 701: Income security and compensation programs are the primary focus of Function 701 expenditures. Also included in this category are expenditures for veterans' pensions, burial, and insurance programs.

NCOA endorses the proposal to provide a full cost-of-living adjustment in compensation and pension benefits as proposed by the Administration and endorsed by the Veterans' Affairs and Budget committees. Such an increase, is anticipated to cost $361 million which is included in the CBO projection.

The Association also proposes three other improvements in Function 701. Foremost, NCOA endorses legislation currently under consideration to provide improved benefits for former Prisoners of War, a new program of benefits for veterans exposed to ionizing radiation during the occupation of Japan after WW II and during atmospheric testing in the 1950's and 1960's and, other minor improvements in compensation programs. The collective cost of these benefits improvements is anticipated to be about $48 million.

Second, the Regional Cemetery concept must be expanded and augmented by a series of cemeteries proximate to major population centers if this program is to continue to provide reasonable access to burial in a national cemetery to veterans. Regretably, the budget proposal does not provide for any expansion of the cemetery system beyond adding 90,000 gravesites at Calverton, New York. This nearsighted policy means fewer than 40 percent of the nation's veterans will live within a 50 mile radius of reasonable access to a national cemetery. Yet, the Administration proposes to eliminate the burial plot allowance for all but disabled veterans beginning in 1989. This equates to something of a "double-whammy".

As stated in previous testimony, NCOA believes the VA should begin land aquisition and planning to acquire cemeteries in ten major population centers (defined in last year's VA cemetery study) not currently served by regional cemeteries. Such acquisitions would make burial space available to nearly 70 percent of the nation's veterans. NCOA also believes legislation regarding elimination of the burial plot allowance should be rejected, particularly in the absence of reasonable access to a national cemetery. NCOA asks the committee to appropriate $10 million with specific instruction that it is to be used for planning, land aquisition and expansion of the National Cemetery System.

Third, among the benefits ravaged by inflation are burial allowances for veterans which have not been increased since the early 1970's. According to 1987 CBO figures it would cost approximately $8 million to bring these benefits to a level reasonably supportive of funeral costs for veterans.

Finally, NCOA asks the committee to endorse the concept of allowing military retirees to retain their Veterans Group Life Insurance (VGLI) as long as they remain subject to recall. This would be consistent with the treatment of reservists and would be negligible in cost since VGLI is a premium supported program.

Function 701 base line spending is estimated by CBO at $15.571 billion. As stated, NCOA advocates additions of $66 million for a total of $15.637 billion.

Function 702: Veterans education and job training programs are the subject of function 702 expenditures. Included in this category is funding for the Montgomery G.I. Bill, other education programs and the Veterans' Job Training Act.

NCOA continues to believe the pay forfeiture required for participation in the Montgomery G.I. Bill should be eliminated. Such charges only serve to discriminate against those who might benefit the most from participation in the program but who by circumstance are financially unable to participate. However, if such fees must be retained, NCOA believes their impact should be reduced by spreading contributions over a longer period of time and by making the benefits refundable at least to those servicemembers who are unable to use the program because of death or disability. NCOA is also hopeful the benefits of the Montgomery G.I. Bill will be extended to servicemembers who are forced by service personnel policy to retire between July 1, 1985 and June 30, 1988. Through no fault of their own, and despite a willingness to continue to serve, many career servicemembers will lose their opportunity for post-secondary education because they have been caught in a vacuum between the Vietnam era and Montgomery G.I. Bill.

Additionally, NCOA is compelled to remind the committee that benefits under the Vietnam era G.I. Bill and the Vocational Rehabilitation Program have not been adjusted since October 1, 1984. At that time, rates were increased by 10 percent over levels set in 1981. Meanwhile, Congress has appropriated billions of dollars in support of non-veteran education programs. NCOA is hopeful these programs will be reviewed this year and that benefits will be increased to restore their value to program participants.

The House Veterans' Committee has already enacted legislation to provide some of these improvements at an anticipated cost of $4 million. The additional improvements proposed by the Association would probably add an additional $30 million to their projection for a recommended increase of $34 million.

Again this year the budget request excludes funding for the Veterans' Job Training Act. However, this program has been responsible for the successful placement of nearly 17,000 veterans in full time skilled employment and has provided some training to more than 33,000 others. By comparison with similar efforts the program has been a tremendous success. Accordingly, NCOA believes legislative authority and funding for the program should be extended through FY 1989. Additional outlays of $50 million would be required to support this worthwhile effort.

Function 702 base line spending is estimated at $425 million. NCOA recommends improvements of $84 million for a total of $509 million.

Function 703: Function 703 outlays are made in support of VA medical care, research and construction programs.

It would be difficult to convey in a reasonable period of time all the disagreements NCOA has with the medical care and medical construction proposal.

The VA should have begun a program of building the medical care system several years ago. Instead, it chose a course of maintenance. Now, the system is at best marginally equipped to meet the needs of veterans and, by projection, will not be able to keep up with the increasing demand for service, particularly from an aging veterans population.

The system must prepare to meet the geriatric care needs of more than 7 million veterans who will be 65 years of age or older in 1990. That's more than twice the number of veterans over 65 in 1980. Nursing care demand can reasonably be expected to increase by 3,500 beds in the next four years yet the budget proposes the construction of only one 120 bed new nursing home.

The system also now faces the additional stress of providing AIDS treatment and research which is consuming even larger portions of the budget. Yet, rather than seek altogether new funding to meet this new demand, the budget proposes to rob part of these costs from other care and research programs.

Consistent throughout the medical care and construction budget is a lack of planning for future needs. The budget also totally ignores the national emergency role of VA medical facilities.

Clearly this is the greatest area of deficiency in the VA budget and has been for several years. The CBO base line projection for current services is $11.258 billion. NCOA recommends additional spending in this function of $403 million for a total of $11.661 billion. Such an increase would facilitate improvements in medical programs, research, and construction as proposed in the independent budget of veterans organizations. This independent budget demonstrates the planning and foresight necessary to preserve the VA medical care system.

Function 704: Housing programs and the loan guaranty revolving fund are the subject of spending in this category.

Clearly this VA program is among the most valuable, not just to veterans, but to the nation for its trickle-down economic benefits. Yet, almost criminally poor policy and management have led this program to near ruin. And, the current Administration's obsessive fascination with divestiture and privatization threatens to push its recovery out of reach.

This year the Administration has once again proposed negotiated rates for VA loans, the without-recourse sale of loans ($780.7 million net in 1989) and a divestiture of $861 million in portfolio assets. NCOA continues to oppose negotiated rates.

Such an action would be a gift to mortgage lenders and could increase the exposure of the VA on defaults since guaranty payments are in part based on accumulated interest from time of default. It should also be remembered that fixed VA interest rates are the only benchmark by which both lenders and homebuyers can measure rate competitiveness.

Without recourse loan sales, and, in fact, loan sales in general are a bad idea. The Administration insists on such sales for two reasons. Foremost, there is a desire to produce short term income. Second, the privatization obsession dictates that profit making enterprises should be sold to private industry. Such logic is misguided at best.

Such sales and divestiture from a government perspective mean only the sale of self-sufficiency in the program. The VA recently announced it had sold $219.3 million in loans for $220.5 million. The margin by measure was .54 above par. The monthly income from those loans averaged .79 percent. In other words the VA sold a thirty-year monthly income of more than $1.5 million for a one time profit of $1.2 million. Such a sale might make some modicum of sense in private industry if the profit were rolled into an income producing investment, but it hardly makes sense to government. Such sales and divestiture from a government perspective mean only the sale of self-sufficiency in the program.

NCOA urges the reconstruction of the VA Home Loan Guaranty Program. It will take several years to accomplish, and it will take substantial budget authority and appropriations, but it took several years to create the problem. The loan guaranty program cannot be repaired overnight. But a sure, permanent and perpetual fix is available. With patience and appropriations the assets of the fund can be increased to a level at which income will once again exceed outlays.

Toward this end, NCOA urges the committee to reject the Administration's credit reform proposal. At the same time, NCOA recommends the $880 million cost of credit reform be used instead for aquisition, maintenance and retention of an income producing loan portfolio. Accordingly, NCOA supports function 704 funding of $1.308 billion.

Function 705: General Operating Expenses are the subject of Function 705. NCOA's major concern in this category is staffing in the Department of Veterans' Benefits. Since 1977 staffing in the Department of Veterans' Benefits has declined nearly 40 percent. In turn, timeliness in claims processing has declined. Where nearly half of all claims were resolved in less than 90 days in 1980 now only 30 percent are resolved in 90 days. Appeals which used to average 10 months now take 14 months. And, notwithstanding the problems the loan guaranty program is suffering, the Administration's budget proposes to cut 75 FTEE from that program as part of the 492 FTEE savings proposed in general operations. Such cuts make little sense and are intolerable. NCOA recommends an addition of $8 million to the CBO base projection of $921 million. The Association recommends Function 705 spending of $929 million.

Thank you.

STATEMENTS OF:

SAMUEL J. WALSH, ASSISTANT DIRECTOR, NATIONAL LEGISLATIVE COMMISSION

JOHN F. SOMMER, JR., DIRECTOR, NATIONAL VETERANS AFFAIRS AND REHABILITATION COMMISSION, THE AMERICAN LEGION

Senator PROXMIRE. I am going to ask Mr. Walsh and Mr. Sommer of The American Legion if they could proceed. Divide your 4 minutes any way you want.

Mr. WALSH. Mr. Sommer will deliver our testimony, sir.

Senator PROXMIRE. Very good. Thank you, sir.

Mr. SOMMER. Thank you, Mr. Chairman.

The American Legion appreciates this opportunity to present its views on the appropriations for fiscal year 1989 for the Veterans' Administration. I will very briefly address our concerns with respect to the Department of the Veterans' Administration under which the programs fall.

DEPARTMENT OF VETERANS' BENEFITS

With respect to the Department of Veterans' Benefits, the proposed fiscal year 1989 budget calls for a decrease in average employment of 492 FTEE. This includes losses of 248 in compensation, pension, and education, 73 in the Veterans' Assistance Service, 75 in loan guaranty, and 11 in vocational rehabilitation and counseling service.

Persistent personnel losses are causing innumerable problems in the regional offices and are adversely impacting on the quality and the timeliness of the benefit delivery. We are convinced that DVB cannot operate effectively at the projected level.

The Senate Committee on Veterans' Affairs has recommended the restoration of the 492 FTEE proposed to be cut in the administration's budget and to add 140 more FTEE in the loan guaranty program, 55 more for vocational rehabilitation and counseling, and 141 additional FTEE for the enhancement of claims processing.

DEPARTMENT OF MEDICINE AND SURGERY

The American Legion fully supports this recommendation.

With respect to the Department of Medicine and Surgery, the Administration's proposal calls for a personnel loss of 4,270 FTEE in DM&S. We ultimately oppose any further reductions of health care professionals.

OMB continues to initiate schemes, such as the 1-percent productivity reduction, at a time when DM&S is suffering severe shortages in nurses especially, as well as other critical health care occupations. Further staffing reductions will result in irreparable damage to the VA medical care system and the erosion in the quality of medical care being provided to the nation's veterans.

The Senate Committee on Veterans' Affairs has recommended additional funding to support a total of 198,275 FTEE, which is 5,917 above the budget request. These are intended to maintain the fiscal year 1988 authorized level of services and staffing and also to support new activations.

The committee also recommended modest program growth in certain cost-effective and high-priority areas. The American Legion strongly supports these recommendations.

We would also recommend that $75 million of the $1.3 billion proposed for federal activities regarding AIDS be allocated to the Veterans Administration. This is badly needed because of the high cost of treating AIDS patients.

Under medical construction, it concerns us that the budget message projected only one replacement hospital and one nursing home care unit, along with a proposed decrease of $62.3 million. The Committee on Veterans' Affairs has recommended an additional $40 million in budget authority for unspecified construction projects, including nursing homes and other high-priority construction projects.

The American Legion totally agrees with the need for this additional funding to help ensure the adequacy of the VA's physical facilities, and we support this recommendation.

Mr. Chairman, that completes our summary.

Senator PROXMIRE. Thank you, gentlemen, very much. I appreciate your excellent testimony.

PREPARED STATEMENTS

In addition to the prepared testimony of The American Legion, the committee is in possession of a prepared statement submitted by the American Association of Dental Schools. Without objection, both statements will appear in the hearing record at this point.

[The statements follow:]

Statement of Samuel J. Walsh, Assistant Director, National Legislative Commission, The American Legion

The American Legion appreciates this opportunity to present its views on appropriations for Function 700 (Veterans Benefits and Services) for Fiscal Year 1989.

The President has proposed for the Veterans Administration budget authority of $30.1 billion to fund medical, compensation, and other programs for the nation's 27.5 million veterans, eligible members of their families, and survivors of deceased veterans.

Included in the total is an appropriation request for $27.9 billion, a net amount of $1.5 billion related to proposed legislation and $694 million in permanent authorizations and offsetting receipts. The actual appropriations request is an increase of $865 million over funds appropriated for FY 1988.

While the Administration's proposed overall increase in funding appears to be somewhat positive in nature, there are a number of ill-considered proposals incorporated into the structure of this budget.

It seems that with each new budget come new and innovative methods by which to whittle away veterans' programs. Thus, The American Legion is grateful that the Congress, guided by the expertise of the Appropriations Committees, maintains a high level of responsibility in the formulation of the VA budget.

Before providing comment on specific budget items, which will be done for the most part with reference to the departments of the VA that administer them, we shall first address those legislative proposals set forth in the budget message. These represent a miscellany of ideas, old and new, some of which seem to totally ignore the anticipated demand for essential benefits and services.

LEGISLATIVE INITIATIVES

# The Administration recommends a cost-of-living adjustment of 4.2 percent in compensation and related benefits to be effective December 1, 1988. The position of The American Legion is that these COLAs should be at least consistent with increases in the Consumer Price Index. The proposed 4.2% increase for those disabled in service - the most deserving of all Federal beneficiaries - appears, to be commensurate with the current rate of inflation.

# The budget proposal contains a legislative initiative that calls for veterans' disability compensation and survivors' DIC rates to be indexed, by statute, to automatically increase by the same percentage which Social Security benefits increase. The American Legion opposes the indexing of compensation and DIC benefits, and we have testified in opposition to identical proposals in the past. We have found through the years that Congress has been fair and generous in providing for cost-of-living adjustments in benefits for the service-disabled and survivors of the service-deceased. Of equal importance is the fact that hearings before the Veterans Affairs Committees on legislation relating to the COLAs, provides a forum at which other legislative issues such as Special Monthly Compensation eligibility criteria, and the development of additional presumptive disabilities may be discussed.

# Another proposal would change the eligibility for the current $150 plot allowance making it consistent with the eligibility requirements for the basic burial allowance in FY 1990. The American Legion is totally opposed to this idea. We continue to feel that Congress made a mistake when it restricted criteria for the burial allowance. We are mandated to pursue the restoration of the former eligibility criteria for the burial allowance to all veterans, and to increase the amount of the plot allowance.

# A proposed amendment to section 806 of title 38, USC, would authorize assumption by the VA of full responsibility for the Veterans Mortgage Life Insurance program. We understand that under current law a private insurance carrier acts as the insurer in this program, and it is reported that this arrangement has proven to be costly and inefficient. Upon review, we found that there are over 5,500 veterans covered in

this program and approximately 408 claims were handled in 1987. In light of the projected annual savings of $100,000, we see no reason why the VA Insurance Service cannot absorb the additional workload, and we support this proposal.

# Proposed legislation would repeal the authority that permits VA to make education loans to veterans. This has been attempted several times in the past. Although an earlier cost-savings measure, the Omnibus Budget Reconciliation Act of 1981, limited the number of individuals eligible for VA education loans. Those who retain eligibility and who depend on these loans could be forced to discontinue their program of education or training. Thus, the American Legion continues to oppose this initiative.

The Legion supports annual cost-of-living increases in the Reinstated Entitlement Program for Survivors, (Social Security for survivors of veterans who died of service-connected causes), including a 4.2 percent increase effective December 1, 1988.

# The American Legion strongly supports the expansion of authority to allow tuition reimbursement to nurses for degree-related courses, as much needs to be done in the way of salaries and fringe benefits for the purpose of retaining and recruting nurses in the VA system.

# The Administration's Federal credit reform proposal would require that agencies issuing Federal credit bear the costs of the grant equivalent subsidies provided through credit programs. According to the information contained in the budget message, a grant equivlent subsidy occurs whenever the Government provides credit to borrowers on more favorable terms than those available in the private sector. The proposal would require that VA make payments to the Treasury in the amounts of the subsidy prior to the issuance of a vocational rehabilitation loan. Loans of up to $620 are available to service-connected disabled veterans enrolled in vocational rehabilitation programs as provided under Chapter 31 of title 38, USC when, in the opinion of the rehabilitation counselor, the veteran is temporarily in need of additional assistance. Repayment is made in ten monthly installments, without interest, through deductions from future payments of compensation, pension, subsistence allowance, educational assistance allowance, or retirement pay. Therefore, repayment of the loan is virtually guaranteed. We see two problems with this proposal. The initial problem is that the Treasury could conceivably be empowered with the authority to impose policy on the Veterans Administration with respect to the operation of the vocational rehabilitation loan program. In addition, the figures involved would, as it has in the instant budget proposal, distort the VA budget. It gives the appearance of additional funding for veterans, but it does not effect veterans whatsoever. Therefore, we do not support this proposal. A similar discussion is contained in the discussion of the VA Home Loan program later in this statement.

DEPARTMENT OF VETERANS BENEFITS

Of the agency's total budget for FY 1989, 57 percent will be allocated to the direct benefit program activities of the Department of Veterans Benefits. These programs are, for the most part, entitlements that statutorily must be funded. Their purpose is to provide compensation for service related death and disability, nonservice-connected disability and death pension benefits, education subsistence allowances; and burial benefits.

These direct benefit programs are administered through 59 regional offices located in the 50 United States, the Commonwealth of Puerto Rico, and the Philippines. Under the proposed budget there will be a reduction in average employment of 492 FTEE within the Department with a net reduction in payroll of $7.5 million. This includes losses of 248 in the Compensation, Pension, and Education Service; 73 FTEE in Veterans Assistance Service; 75 in Loan Guaranty; 49 in Insurance; 11 in Vocational Rehabilitation and Counseling Service; and 54 in Support Services.

As a basis for the reduced employment levels, the summary accompanying the budget request states that the decrease in the Department's employment request of 492 FTEE in 1989 is attributable to modernization savings of 54 FTEE, and 438 FTEE due to productivity improvements and declining workloads. These caseload reductions, the summary states, are commensurate with trends reflecting our declining veteran population.

The American Legion is supportive of economy of personnel in management, and maximum productivity by all Federal employees. We have stated so in the past. However, the complexity of veterans' claims has increased due in part to issues such as the pathology of post-traumatic stress disorder, the effects of exposure to Agent Orange and ionizing radiation, just to name a few. The more complex an issue is the more man-hours are required to properly develop and adjudicate each case. A certain minimum of personnel is needed to properly process cases, without delay-causing errors that have to be corrected; and productivity can only be used as a relative guide when considering the amount of work that must be done in processing a single case for an award of benefits.

Mr. Chairman, if these proposed employment reductions are enacted, the employment in the Department of Veterans Benefits will have been reduced by well over 6,000 FTEE since 1979. The American Legion is concerned by the cumulative effect these consistent and persistent personnel losses have had on both the quality and timeliness of the delivery of benefits and needed services to veterans and their survivors.

The impact of reduced staffing levels at DVB field stations in recent years is graphically illustrated by steady increases in both the processing times and the error rates in benefit claims. According to available figures, in FY 1982, the regional offices were able to process 41.5% of their compensation cases in 90 days or less. In FY 1987, they were only able to complete processing on 30.9% of compensation cases within this standard. In FY 1982, 56.3% of the pension cases were completed in 90 days and in FY 1987, the percentage was 53.0. In FY 1982, 65.5% of the burial claims were processed in 30 days and in FY 1987, only 55.2% were completed within 30 days. Of particular concern, is that during the last three years, there has been no appreciable improvement in the quality of the decision-making processes in the field. Rather, the trend reflects a perceptible increase in the error rate in both authorization and rating decisions.

These figures, however, do not completely measure the impact of the continuing loss of personnel upon the individual regional offices. Although there have been no formal reductions in force, attrition through transfers to other agencies, resignations, and retirements without replacements have been the methods by which mandated staffing reductions have been met. This process does not produce a uniform result at each station. The loss of key adjudicative, administrative, or support personnel directly effects the timeliness of the claims processing operations.

DVB has recently developed a proposal to implement the consent decree in the litigation Semenchuk v. Turnage, by establishing 30 hearing officer positions to conduct personal hearings at regional offices. Personnel for these positions will be drawn from existing rating boards, and most likely, will require additional funding for training, travel and support.

The justification for the continued reduced levels of staffing in the field stations is predicated, in part, on trends indicating the number of claims has been steadily declining. The most often cited example of such trends is the current education program for Vietnam Era veterans wherein the number of veterans who are eligible and enrolled has sharply declined in recent years. In addition, the program will terminate on December 31, 1989. This set of circumstances should theoretically enable regional office directors to reassign adjudication and authorization staff to other types of cases as this program phases out. This favorable scenario, however, overlooks the fact that PL 98-525 has provided new educational benefit programs and the overall educational caseload has begun a phase of long-term growth. Under Chapter 32, the Post-Vietnam Era Veterans' Educational Assistance program the number of participating individuals has grown from 63,000 in 1986 to approximately 88,500 in 1988. The numbers, however are expected to gradually decline to 59,500 by 1993. Under Chapter 30, the All-Volunteer Force Educational Assistance Program, however, the number of current participants for 1988 is projected to be 19,400 and will more than double in FY 1989 to 41,900. The number of participants will continue to increase to level off at 242,000 by 1993. The Selected Reserve Educational Assistance program is also expected to undergo substantial growth during the same time period. The number of participants will have grown from 52,400 in 1987 to 136,000 by the end of 1988 and reach a total of 185,300 in 1989. Enrollment is expected to level off at about 213,000 by 1992.

Mr. Chairman, we wish to reemphasize the fact that the average employment in the field stations has been sharply decreasing in recent years. In 1986, the staffing level was 3,801 FTEE. In 1987, this was reduced by 117 FTEE. In 1988, it was further cut by 174 FTEE and under the proposed budget for 1989, staffing will be further reduced by another 248 FTEE. These figures relate to Compensation, Pension and Education alone, and do not include reductions in other staff.

The American Legion is deeply concerned that the field operations of the C&P Service under current staffing levels cannot process the present workload in a reasonable, timely, and efficient manner. The current workloads and what in our judgment are unnecessarily lengthy processing times, do not justify the proposed staffing levels.

Mr. Chairman, we wish to also comment on several factors which will have a very clear and immediate impact upon the field station workload and which have not been addressed in this budget proposal. On January 19, 1988 veteran status was granted to former members of the Merchant Marine. This group which numbers 80,000 - 90,000 is now eligible for the full range of benefits and services enjoyed by other war veterans. The small trickle of claims already filed will undoubtedly grow substantially in months to come.

In addition to the requested decrease of 438 FTEE based upon productivity improvements and declining workloads, a further reduction of 54 FTEE is included based upon modernization savings. However, under the budget requested for ADP Systems Management, the funding level is some $12 million less than the FY 1988 level. The FY 1989 request and the short-term improvements to be undertaken or completed during this period, have not thus far addressed the problem of productivity or timeliness of claims processing, in our judgment. The American Legion is supportive of DVB's efforts to implement an ADP modernization program, in view of the age and limited capacity of the current TARGET system equipment. The ultimate goal of this program will be to improve the efficiency and quality of the claims processing operations in the regional offices, thereby realizing savings in staffing and resources. Claimants will likewise benefit by having their claims handled more expeditiously. It is, therefore, not at all clear how the current "bare bones" approach to modernization is expected to produce the anticipated personnel savings cited in the current budget proposal.

We believe an obvious conclusion can be drawn that the continued reductions in staffing levels in the field stations have had a direct and adverse impact on the VA's overall ability to deliver benefits and services in an efficient and timely manner. There is no doubt that the planned introduction of new technology and upgrading of current equipment and systems will enhance field station operations. However, we hasten to note that current efforts toward modernization are primarily focused on maintenance of the current level of ADP support and long-range planning. Implementation of any major improvements is still some years away.

We are convinced that DVB cannot operate effectively at the projected level. The Senate Veterans Affairs Committee has recommended the restoration of the 492 FTEE proposed to be cut in the President's budget and to add (1) 140 more FTEE for the loan guaranty program, (2) 55 more FTEE for vocational rehabilitation and counseling programs, and (3) 141 more FTEE for the enhancement of claims processing. The American Legion fully supports this recommendation.

DEPARTMENT OF MEDICINE AND SURGERY

The American Legion believes the Veterans Administration medical care program budget has to be maintained at sufficient levels to ensure the provision of high quality patient care. Unlike the direct benefit programs which are statutory in nature, the medical care program funding level is not arrived at through objective criteria. The strength of the medical care program depends entirely upon the adequate appropriation of funds by Congress. Unfortunately, the Veterans Administration medical care budget has only witnessed an increase in actual dollars versus constant dollars in recent years.

The FY 1989 medical care budget provides for treating roughly 1.2 million inpatients and for 23 million outpatient visits. The medical care budget authority of $10.3 billion represents 38 percent of the FY 1989 appropriations request. This percentage is unchanged from FY 1988.

For the first time the budget year pay raise is projected within the Administration's request. The budget funds the proposed two percent pay increase for FY 1989 in each account at the absorption rate assumed in recent budgets. While at first glance it would appear the Administration's requested increase of $208 million above the FY 1988 level for medical care is generous, close examination shows that roughly 96 percent of this increase will be absorbed by inflation, payroll increases and related changes. Upon further examination of the FY 1989 medical care budget we must comment on other serious reservations.

Again, as in past years, the Department of Medicine and Surgery is being asked to absorb a one percent productivity reduction and also to lower staff to patient ratios. These actions project to a net savings of $192.7 million and a reduction of 4.270 FTEE during FY 1989. We commend the Administration for proposing to expand funding and staffing to increase extended care programs and to support new facility activations. However, rather than proposing additional appropriations to support new initiatives, it appears a stratagem of cost shifting is being employed to achieve the desired outcome.

We are concerned that total Department of Medicine and Surgery employment levels continue to decrease while overall actual workload figures rise. Direct care employment levels are projected to decrease by 1,191 FTEE in FY 1989. Also, administrative and ancillary FTEE levels are projected to decrease.

While there are projected FTEE increases designated for Intermediate and Nursing Home Care, all other acute care employment levels are projected to decrease. The workload data from other inpatient functions does not suggest the acute workload level will decline commensurately with the loss of direct care FTEE. In the best of times the acute care staff to patient ratios are marginal.

We support the Veterans Administration's efforts to reduce costly inpatient care by developing alternative hospital programs, and this is addressed in detail later in this statement. The development of additional nursing care beds through new construction or by the conversion of hospital beds is commendable. We caution, however, that to permanently reduce acute care medical beds may precipitate a future shortage of beds for this level of care. The proposed budget reflects a loss of 1,258. As is customary, acute care beds are usually the entry point for long-term care. Also, the Veterans Administration is the primary back-up to the Department of Defense contingency planning, as mandated by Public Law 97-174.

In the opinion of The American Legion, further reductions in staffing and acute care bed levels will result in irreversible damage to the VA medical care system and the erosion of the quality, quantity and timeliness of medical care that is provided to this nation's veterans.

The Administration's FY 1989 budget proposes decreases of $4.7 million and 79 FTEE in the Readjustment Counseling Program which is carried out through 188 Vet Centers. These resource reductions will result from a gradual phasing down of the Readjustment Counseling Program according to the budget language. The American Legion supports a continuation of the Vet Center Program, contingent on a plan wherein decisions on assimilating the Readjustment Counseling Program into the VA medical centers, will be made on a case by case basis, as the utilization of services diminishes. The nationwide workload totals for the Vet Center Program in FY 1987 show the highest levels for new veteran clients and total cumulative visits since the inception of the program. Therefore, we adamantly oppose the idea of reducing the funding or the employment level.

The American Legion commends the establishment and funding of a VA Homeless Veterans Program during FY 1987-88, made possible by Public Law 100-71. Of the $20 million in funding obligated for this program in FY 1988, a total of $15.5 million was programmed for the operational expenses of patient care in VA domiciliaries and community-based residential care facilities, and $4.5 million is planned to convert existing, underutilized VA hospital beds to domiciliary beds. The American Legion is concerned, however, that the resources necessary to maintain the Homeless Veterans Program in FY 1989 and beyond will be funded within the overall medical care base budget. Obviously, in order to continue a program of any magnitude, it will require additional recurring resources.

The VA is in the process of establishing four specialized Acquired Immune Deficiency Syndrome (AIDS) treatment centers beginning with FY 1988 resources. This action can effect cost-efficiency and help to promote necessary specialization for the treatment of AIDS. We caution, however, this program also will require annualized funding.

A net decrease of $34.4 million is projected in the medical care capital investment program for FY 1989. In order for the VA medical centers to provide high quality patient care, adequate medical technology and Automated Data Processing (ADP) needs must be met.We urge this Subcommittee to ensure that sufficient funding is provided to the VA's Department of Medicine and Surgery so that a proper capital investment program is maintained.

Adequate funding of education and training programs is a key ingredient to maintaining high quality health care. We are appreciative to note the Administration has requested an increase of funding and FTEE levels to support this aspect of the VA's mission in FY 1989. Also, we are supportive of a proposal to increase tuition support funding for VA health care personnel and to continue the Health Professional Scholarship Program. These initiatives will help support the recruitment and retention of scarce allied health personnel, particularly nurses.

The VA medical care budget for FY 1989 represents an increase of $208 million above the previous year's level. Mr. Chairman, we are concerned that the medical care program continues to expand and acquire new responsibilities while the medical care program budget continually diminishes in constant dollars.

The American Legion fully supports and encourages the VA to ensure that its medical care programs keep pace with the needs of the aging veteran population and also meet the spectrum of needs of the rest of the veteran community. In order to do so, we believe that annualized funding increases are necessary to offset the development of new medical care programs and for the continuation of previously established programs. Also, we believe employment levels must be maintained in sufficient strength to properly fulfill the health care mission of the Department of Medicine and Surgery. A primary concern, is the fact that most new FY 1989 medical care initiatives will be accomplished through a redistribution of the proposed budgetary authority, rather than from new resource support.

The Veterans Affairs Committee has recommended additional funding to support a total of 198,275 FTEE, which is 5,917 FTEE above the Administration's request. These are intended to maintain the FY 1988 authorized level of services and staffing and to support new activations. The Committee also recommended modest program growth in certain cost-effective and high priority areas. Emphasis is on areas of extended care in VA, State Home and community-based facilities and in programs providing alternatives. to institutional care. Additionally, emphasis is being placed on AIDS and drug abuse treatment and research (as well as other high priority research), conversion to a unit-dose system, homeless veteran care, and quality assurance. We are strongly supportive of the Veterans Affairs Committee's recommendations with respect to the VA medical programs.

The American Legion recommends that $75 million of the $1.3 billion proposed for federal activities regarding AIDS be allocated to the Veterans Administration.

Medical and Prosthetic Research

An increase of $11.3 million in research funds is projected for FY 1989, up to $204.2 million.

It should be noted, as described in the budget document this appropriation provides funding for program activities in the following areas:

Medical Research: Efforts in this area fall into two broad categories: research on medical, dental and psychiatric problems that are specific to the veteran population (spinal cord injury, Agent Orange, etc.); and research on general health problems that are particularly prevalent among veterans (e.g., alcoholism, aging and schizophrenia). Most of the investigators are VA clinicians and the close links between the research and patient care functions give the research program a clinical orientation that is directly related to its goal of providing quality medical care to the veteran patient.

Rehabilitation Research: This program focuses directly on the needs of the veteran who is functionally impaired as a result of amputation, paralysis or the loss or impairment of his or her vision, hearing or speech. The latest computer and other technological advances are used to develop devices, techniques and concepts in rehabilitation that will minimize the disability and promote functional independence among disabled veterans.

Health Services Research: The goal of this research is to improve the effectiveness and efficiency of the Veterans Administration's health care delivery system. Health services researchers develop and disseminate information designed to help clinicians, investigators and administrators select medical interventions and administrative actions that are most appropriate to the Agency's mission, which is the provision of quality medical care services to the veteran patient.

The Veterans Administration's Medical and Prosthetic Research program is a matter of particular interest to The American Legion, as a result of our sensitivity to the importance of research in the triad of the VA health care programs: clinical care, education of health manpower, and research. These three functions cannot thrive independently - the presence of the other two is required. It would be impossible for the Veterans Administration to continue the provision of high quality medical care without a strongly funded research program. Much of the research in which VA engages is basic research that is advantageous not only to veterans, but is of direct benefit to all mankind. Equally as important is the fact that a strong research program ensures the recruitment and retention of high quality physicians into VA service.

Average employment reflects losses of 95 FTEE in medical research and 15 FTEE in health services research, and no change in rehabilitation research, for a total of 4,407 FTEE. Available information does not reflect how these losses are to be accomplished. However, we are concerned, as we maintain that there is a need not for a reduction, but for an increase in available personnel for VA research activities. The Federal Government could make no wiser an investment than ensuring a vigorous and viable VA research program that benefits the entire American people.

GRANTS FOR CONSTRUCTION OF STATE EXTENDED CARE FACILITIES

An increase of $1.7 million, to $42 million is proposed for grants for construction of state extended care facilities.

The American Legion is extremely aware of the importance of the services provided by state homes, in that they have substantially reduced the burden that otherwise would have been borne by the Veterans Administration. As of January, 1988, 35 states had established state homes. Since some states have more than one home, there is a total of 52 homes and 3 annexes. During FY 1987, the state homes maintained an average daily census of 8,561 nursing home, 4,117 domiciliary, and 487 hospital patients.

The FY 1989 request will provide for five projects which will produce 732 nursing home beds, 22 domiciliary beds, and nine nursing home renovation projects in five states.

Mr. Chairman, we note that proposed legislation is being considered that will increase per diem rates for state home care. Almost $19 million have been identified as the total resources required to complete this action. The American Legion fully supports this increase, as we are mandated under Resolution No. 195 of the 1986 National Convention, to support an annual review and revision of the rates of reimbursement by the Veterans Administration for the care provided veterans in state veterans homes.

The last increases in per diem rates were set forth in PL 98-160, effective April 1, 1984. We are aware that 38 USC 641(c) currently requires the Administrator to submit a report every three years to the Committees on Veterans Affairs on the adequacy of the per diem rates payable to each state for domiciliary, nursing home and hospital care for each veteran receiving such care in a state home. The American Legion believes that the fair sharing of the cost of providing extended care for elderly and disabled veterans will encourage states to meet the needs of the aging veteran population, and we urge that the per diem rates be reviewed, keeping in mind that they have not been increased for four years.

The American Legion considers this program a wise investment, and when considering the ongoing efforts to reduce Federal spending, the role of the state homes is even more significant. As we move into the period of an aging veteran population that will be with the nation for the foreseeable future, the states can be of major assistance to the Federal Government in caring for this population through state extended care facilities. However, in order to materially ease the pressure on the VA, adequate funding must be provided to the states so that proposed projects may be completed.

Grants To The Republic of the Philippines

The budget message provides a grant of $500 thousand to the Veterans Memorial Hospital in Manila to replace and upgrade equipment and to rehabilitate the plant and facilities. This grant has been made by the United States consistently since the end of World War II. The Veterans Memorial Hospital cares for many Filipino veterans who served in the Allied cause during WWII. There is certainly an obligation by this country to continue to show our gratitude and concern for them. The American Legion continues its support for this grant.

CONSTRUCTION PROGRAMS

The budget proposal recommends a decrease in the VA's construction programs of close to $22 million, down to $500.6 million. Replacement and modernization of existing facilities is funded at $127.9 million for FY 1989. This level is in contrast to more than twice that amount in FY 1987 and a reduction of $62.3 million from the current year level. No money will be reprogrammed from the major working reserve.

Mr. Chairman, we believe specific sections of the Administration's construction proposal require further comment.

For the first time the Veterans Administration proposes changing the minor construction cost limitation from less than $2 million to less than $3 million. Correspondingly, the major construction account would fund projects costing $3 million or more. Initially, we believe this change could improve the method by which minor construction projects are obligated, by lessening the degree of preliminary oversight and by reaching contractual awards more readily.

The Administration's budget request provides $367.8 million for major projects, $123.8 million for minor projects and $9 million for the parking garage revolving fund.

Among the major medical construction projects for which funding has been requested is a medical center modernization project at Newington, CT; a replacement medical center at Pittsburgh, PA (Aspinwall Division); clinical improvements and a Mental Health and Behavioral Sciences Center at the Indianapolis, IN VA medical center; a clinical addition and parking garage at the Atlanta, GA VA medical center; and a 600-bed replacement domiciliary at the Mountain Home, TN VA medical center.

Other significant major construction proposals include a 120-bed nursing home care unit addition at the Tampa, FL VA medical center and clinical improvement projects at the following medical centers: Beckley, WV; Nashville, TN; Perry Point, MD; and a new 30-bed spinal cord injury unit at the San Antonio, TX VA medical center. Major renovations and fire and safety improvements are proposed for VA medical centers at Montrose, NY and Leavenworth, KS. Funding for the relocation of the Montgomery, AL Regional Office to agency-owned grounds is also proposed.

The American Legion supports all of the above mentioned construction projects and we also realize there are many more projects urgently needed throughout the Veterans Administration system. As we have said many times before, the capital plant of the VA system is a multi-billion dollar investment by the Federal Government, and it must not be allowed to deteriorate.

While we are appreciative of the VA providing grants for the expansion of state home extended care facilities as discussed before, we must again express our concern that the VA must also expand its independent nursing home care unit construction. The proposed 120-bed nursing home addition at the Tampa, FL VA medical center, while badly needed, will not appreciably lessen the demand for this level of care in that state.

New VA nursing home care unit activations, through new construction and by conversion of underutilized hospital bed space, in conjunction with state home programs, will all be required to provide long-term care to increasing numbers of eligible aging veterans.

The Veterans Affairs Committee has recommended an additional $40 million in budget authority for unspecified construction projects including nursing homes and other high-priority construction projects, in order to move forward on a reasonable schedule to help ensure that the Veterans Administration's physical facilities are reasonably adequate to meet veterans' increasing needs for VA health care services. The American Legion totally agrees with the need for additional construction funding, and supports this recommendation.

DEPARTMENT OF MEMORIAL AFFAIRS

The proposed funding for the Department of Memorial Affairs reflects a modest increase of $299,000 above the 1988 current estimate. The projected average employment for FY 1989 is 1,203, which maintains the 1988 current estimate level.

Over the years, complaints from our field offices, directed at the Department of Memorial Affairs, have been minimal. As of late however, we have been informed by several of our Department Service Officers of delays within the headstone and marker program. Our review of the situation has revealed that some of the factors that have played a key role in the delays are temporary such as the ongoing conversion to computerization within the program. However, we also find that over the past dozen years or so, the workload has almost doubled, while allocated resources have not kept pace with this growth. Should this trend continue, as projections show that it will, more serious repercussions and delays will be realized across the system. According to VA's recently submitted Report on the National Cemetery System, there were to be an estimated 426,800 veteran deaths in 1987, increasing to over 610,000 in 2010. Annual interments are expected to reach about 86,500 in 2010. Based on these statistics alone, it is clearly evident that the Department of Memorial Affairs will encounter extreme difficulty maintaining the quality of service presently provided, without a substantial increase in personnel and funds.

The State Cemetery Grant program is a Federal grant program administered by the VA Department of Memorial Affairs to aid states in the establishment, expansion and improvement of veterans' cemeteries. Public Law 95-476 authorized this program.

The primary purpose of the program is to assist the states to provide gravesites for veterans in those areas where national cemeteries cannot fully satisfy the burial needs of veterans. The program is intended to complement the VA National Cemetery System. The VA provides up to 50% of the costs associated with the development, expansion or improvement of a state-owned veterans' cemetery.

For the last two years, VA has not requested additional resources to support this program because carry-over money has been available. Funds allocated to this program can be carried over for three years.

This year however, the Department of Memorial Affairs has identified requests for funding from various states which total almost $12 million, thereby fully justifying the $9 million included in the budget proposal to support this program over the next three years. The American Legion recognizes the importance of this program, and fully supports the $9 million proposal.

VA HOME LOAN PROGRAM

Mr. Chairman, The American Legion is well aware of the problems that have beset the VA Home Loan program in the past several years, especially with the downturn in the economy in the oil patch states. We are also sensitive to the need to curtail appropriations to put the Federal budget back on a sound fiscal basis. Nevertheless, the VA Home Loan program probably impacts more veterans than any other single veterans program, and we believe that it's advantage - to the veteran, to the housing industry and to the Nation - cannot be discounted. We urge your approval of the Administration's request for $658 million for the program in FY 1989.

The American Legion is working with the Committees on Veterans Affairs to develop means for returning the Loan Guaranty Revolving Fund to self-sufficiency. It must be recognized, however, that there is no "quick fix" to the current problem. The home loan program is still paying for the high inflation, high interest rates and related ancillary problems which had their origin early in this decade. We are hopeful that with good planning, the need for appropriations will gradually shrink over the next seven years.

In this regard we would like to comment on the Administration's requested legislation to "reform" Federal credit. This legislation will supposedly calculate in dollars the benefit granted by the Federal Government in each of its credit programs and deposit such a sum for each transaction in the Treasury. As we understand this measure, the dollar value of the benefit which the home loan program grants to veterans is estimated to be 6.6% of the loan principal. It appears as if this fund will eventually replace the Loan Guaranty Revolving Fund -- and indeed all similar funds -- as the source of revenue to settle claims, manage property, and acquire homes. This proposal raises many questions. What authority, for example, would this legislation give the Treasury over program policy? We suspect that Treasury could conceivably be put in the position of dictating program operations to the VA. Equally as important, we are not so naive as to believe that the Federal credit "reform" legislation would represent merely a transfer of pay out authority. Instead, it would appear to us that the Federal credit programs involved are being targeted for abolition by those elements in the Office of Management and Budget, who believe that the Federal Government does not belong in the credit market under any circumstances. Certainly, the high potential cost of this legislation would form a strong justification for eliminating programs such as Loan Guaranty. While all of us are agonizing over a $685 million appropriation for the LGRF in 1989, the Administration's proposal would add another $1.3 billion to the cost of the program -- and that is only in the first year. The most charitable interpretation we can render of this proposal is that it constitutes an extremely costly form of mortgage insurance. The American Legion thus strongly opposes this or any other legislation which would remove, or have the potential of removing, the home loan program from the control of the Veterans Administration.

VETERANS JOB TRAINING PROGRAM

Mr. Chairman, as you are probably aware, the Congress has just passed S. 999, the "Veterans Employment Training and Counseling Amendments of 1988." Among its other provisions, S. 999 reauthorizes the Veterans Job Training Act (VJTA) for Fiscal Years 1988 and 1989 at a level of $60 million per year. The measure also provides for substantial changes in VJTA with regard to counseling which The American Legion believes, will substantially improve participation under the program. We therefore urge your favorable consideration for the appropriation of $60 million for the program in the FY 1989 budget. We further recommend to the Subcommittee that the Congress add $60 million in supplemental funding for the current fiscal year, since according to the latest information provided to us by the VA, VJTA has less than $12 million remaining from previous appropriations.

Mr. Chairman, that concludes our statement.

STATEMENT OF THE AMERICAN ASSOCIATION OF DENTAL SCHOOLS

The American Association of Dental Schools (AADS) represents all of the dental schools in the United States, as well as advanced education, hospital, and allied dental education institutions. Ours is the only national organization concerned exclusively with the needs of dental education.

The AADS is pleased to present this statement expressing our views on the Health Care and Health Research Budget for the Veterans Administration (VA) in fiscal year 1989. Our comments will focus on areas of concern to the delivery of dental services and dental education activities in the VA. We support the overall budget levels recommended by the Friends of VA Medical Care and Health Research Coalition.

Dentistry in the VA: Background

In order to provide a better framework for our budget recommendations, we will describe the various dental components in the VA in terms of dental personnel and patient care, advanced dental education in the form of residency training, geriatrics, continuing education, and dental research.

1. Delivery of dental services in the VA - Dentists, dental residents, and dental hygienists are involved in providing needed dental care to veterans who are legally eligible for such care. Although inpatient and outpatient care can generally be provided for service-related dental conditions, veterans' eligibility for dental care is more restrictive than for medical care. One significant limitation is that medically adjunct dental care problems of inpatients can be treated, but this service cannot be provided to outpatients -- even where the attending physician determines that the treatment of oral health conditions is necessary for improving the overall medical condition. Another

restriction is that home-based dental care cannot be provided, even if the dental problem is based on a service-related injury. AADS will work with the authorizing committees to try to correct these serious obstacles to oral health for the nation's veterans.

The VA is an excellent example of the total team approach to health care - - involving dentists, physicians, and health assisting workers. The VA dental staffing figures for fiscal year 1986 were: 924 dentists, 348 residents, 174 hygienists, 1029 dental assistants, 403 laboratory technicians, and 244 clerical workers. They handled 926,007 inpatient and 792,103 outpatient visits at over 200 VA dental clinics and related facilities in fiscal year 1986. The resulting treatment rendered -- to 74,754 inpatients and 96,786 outpatients -- ranged from preventive interventions to complex restorative procedures.

These dental services are provided to a patient population having oral health problems that are usually more severe than the general population. Often the oral condition is complicated by by other medical problems. In fact, the VA patient population is similar to groups which have historically been underserved in our nation's health care system. According the VA Medical Programs Report for FY 1989 (prepared by the Office of Budget and Finance), the VA hospital user -- compared to the overall veteran population -- is poorer and more likely to be single, disabled, older, and a minority group member. Given this special patient population with more complicated health problems -- a situation that requires a multi-disciplinary health care approach -- the VA offers a unique and valuable training ground for dental education.

2. Advanced Education via Hospital Residencies- The VA plays a vital role in dental education, as 72 of the 172 VA medical centers have affiliations with all 58 U.S. dental schools. The

key educational connection is residency training for dental school graduates. These are funded through a combination of VA and dental school support. The VA supports 155 accreditated dental residency programs of several types; a majority are in general practice, with others in oral surgery, prosthodontics, periodontics, endodontics, oral pathology, public health, and anesthesiology. In fiscal year 1986 it was estimated that the VA was fully or partially involved in the training of 876 dental residents, about 22 percent of the nation's total. Residencies may be based completely at the VA, or based at an educational institution with a rotation through the VA; for example, 3 dental students in a school program could utilize one VA residency position. A total of 355 dental resident positions were budgeted for direct VA funding for the fiscal year 1987-88.

The VA also has direct connections with dental students and faculty. Over 800 dental students worked as clerks in VA clinics in fiscal year 1986, to supplement the clinical aspect of their dental education. 447 VA dentists hold part-time faculty positions with the affiliated dental schools.

3. Geriatric Dentistry- This is a critically important VA initiative, due to the more complicated medical problems of the elderly and the growing elderly veteran population. Recent estimates project a that an increasing percentage of veterans will be 65 years of age or older:

Year	Vet. Pop.	Vets 65+	%	% incr. since 80
	(in millions)			
1980	28.6	3.0	10.4	--
1990	27.1	7.2	26.6	156
2000	24.3	9.0	37.0	255
2010	20.7	8.1	39.1	276

(Source: VA Geriatric Dentistry Newsletter, Feb. 1988)

In response to this trend, Congress established the Geriatrics and Gerontology Advisory Committee (GGAC) in 1980; this multidisciplinary group of 12 health professionals and gerontologists advises Congress and the VA on methods to address the geriatric veteran issue. Three major VA geriatric initiatives since the GGAC's creation have been Geriatric Research, Education, and Clinical Centers, the Geriatric Fellowship Program, and Centers on Oral Health and Aging.

(a) Geriatric Research, Education, and Clinical Centers (GRECCs) - There are currently 10 centers located in: Bedford and Brockton/ West Roxbury, Massachusetts; Durham, North Carolina; Gainsville, Florida; Little Rock, Arkansas; Minneapolis, Minnesota; Palo Alto, California; St. Louis, Missouri; Seattle and American Lake, Washington; Sepulveda, California; and West Los Angeles, California. GRECCs have strengthened research on aging by consolidating local research expertise and attracting top scientists from beyond the local area. In fiscal year 1986 GRECCs received $17.4 million for research, and two-thirds of this support came from non-VA sources such as other federal agencies, private foundations, and corporations. The centers have conducted 11,500 inpatient and 16,850 outpatient evaluations, produced over 670 books or articles, and sponsored over 7000 educational activities.

Dentists may participate in GRECCs, but their participation varies by location. Although each center has one or several specialized research areas, none has a specific oral health focus. The creation of a GRECC with such an emphasis has been recommended by the GGAC and AADS.

(b) Geriatric Fellowship Program - Since 1982 the VA has operated this two year fellowship program (for dentists with specialized post-graduate training) at 5 VA medical centers in

Boston, Denver, Loma Linda (California), Sepulveda (California), and Milwaukee. Starting with a goal of graduating 5 dentists per year, the program has graduated 20 dentist-geriatricians to date -- 16 of whom have been appointed to VA clinical or research positions. The VA hopes to add one additional VA medical center to this program by fiscal year 1990. The geriatric fellowship program is a direct effort to meet a serious need for advanced geriatric training to provide a leadership cadre of dentist-geriatricians, as identified in Personnel for Health Needs of the Elderly Through Year 2020 (Sept. 1987 Report to Congress published by the U.S. Dept. of Health and Human Services). One example of the program's effectiveness is that all 5 program graduates in fiscal year 1984 sought research funding for age-related projects.

(c) Centers on Oral Health and Aging - In July 1984 the VA began discussions with the National Institute on Aging (NIA) and the National Institute on Dental Research (NIDR) on planning an inter-agency geriatric education and research initiative. Various researchers, clinicians, and academicians offered their opinion on the most pressing geriatric research areas. This collaboration is now in the final review stage for the development of Centers on Oral Health and Aging, which will allow for joint research and education projects among the three agencies. The GGAC has recommended future funding for this effort, based on the potential to direct greater resources to meet geriatric research needs. As we will discuss in our budget recommendations, AADS believes that these new centers should be an essential part of future geriatric dentistry efforts.

4. Continuing dental education- The VA operates two dental continuing education centers, which are located in Washington, D.C. (for VA facilities east of the Mississippi River) and Los Angeles (for VA facilities in the western United States).

Instruction is provided via one to five day live courses, or through a variety of audiovisual and programmmed educational materials that are distributed throughout the VA system. All VA health personnel are eligible to participate, and many programs are open to non-VA personnel.

The Washington, D.C. continuing education center, established in 1954, conducts over 40 activities a year. Last year instruction was provided to over 600 VA employees and over 300 persons not affiliated with the VA, on topics ranging from management training to infectious diseases and the medically compromised. The center has produced almost 40 continuing education films for distribution to the various VA facilities.

The Los Angeles center is responsible for the continuing education of 315 VA dentists, 67 hygienists, 364 dental assisting workers, and 196 dental lab technicians in the western United States. Their small staff prepares educational programs with the assistance of VA staff dentists. In fiscal year 1987 the center conducted 40 live courses for 1389 participants, offered at either the Los Angeles center or various VA facilities. The center has also developed self-study courses that have been completed by 744 individuals. For fiscal year 1988 a course on oral manifestation of HIV infection has been developed. As with Washington center, their materials cover a wide range of relevant dental care topics, including an annual update on trends in dentistry.

One example of the scope of continuing VA health education for all health professionals is in the area of geriatrics, where 288 educational activities were provided in fiscal year 1986 for 9300 VA staff and 3200 non-VA participants at all VA continuing education field units (this includes the D.C. and L.A. dental continuing education centers and 17 other types of continuing education centers).

5. Dental research- The VA operates dental research centers in Houston, Texas and Ann Arbor, Michigan. The Houston center was started in 1967, with a research focus on caries (dental decay) control and the salivery glands. The small core of researchers is currently working on caries medication and oral lubrication materials.

The Ann Arbor center was started in 1983, with a research focus on dental materials. The center receives roughly two-thirds of its support through NIDR funding, and one-third through the VA. They are currently working on two multi-center research projects, that involve patient studies at 7 to 8 VA medical centers. One project is focusing on nickel-based alloys, and the other on crown and bridge materials. Much of the data collection at each site involves dental observation of the material's effectiveness. Since this type of VA study provides large sample sizes, it is an excellent model for future VA cooperative research efforts with dental schools. The Ann Arbor center has produced over 50 research abstracts to date, and plans to expand research projects to additional VA medical centers. The center also seeks greater contact with dental faculty willing to assist in research projects. In order to facilitate better patient care, research advances at both the Houston and Ann Arbor centers are disseminated throughout the VA system.

Dental research is also conducted through the traditional method of investigator-initiated projects. In fiscal year 1986, 117 VA dental staff members were actively pursuing approved research projects. This represents approximately 6 percent of the over 2000 dental personnel in the VA system. The GGAC notes that more VA dental personnel could be involved in individual research projects, and in our budget recommendations we will discuss how this goal could be achieved.

2. Budget Recommendations- Health Care

AADS supports a FY 1989 VA health care appropriation of $10.82 billion. This is based on an estimated $10.54 billion that would be required simply to maintain the FY 1988 service level (which received a $10.12 billion appropriation). The additional $298 million is requested for special initiatives in the areas of geriatrics, advanced training, AIDS costs, and health worker shortages. Explanations and justifications for these initiatives are provided below.

(a) Geriatric Research, Education, and Clinical Centers (GRECCs) - AADS recommends an increased appropriation of $10 million to expand the number of centers to 16. PL 99-166 mandates a total of 25 centers, so this would only be a partial step toward meeting this requirement. A more moderate request is made at this time in recognition of budgetary constraints, although this should be a high priority item in formulating future year budgets. GRECCs are essential for the advancement of geriatric research and education in an integrated health care delivery system. AADS also recommends that this expansion allow for an oral health emphasis by specifically designating a new GRECC to focus on oral research. The locational preference for new GRECCs should be tied to the location of new Centers on Oral Health and Aging (as mentioned earlier, these will be jointly funded through NIA, NIDR, and the VA). This would allow for an efficient pooling of resources and utilization of personnel already experienced in geriatric treatment and research.

AADS also recommends that all applicants for GRECC grants should be required to show evidence of efforts to conduct cooperative education and research with area dental schools.

(b) Education and Training- AADS recommends an increased appropriation of $11 million for education and training in critical shortage areas. We support an increase of 200 FTEE for health traineeships, including medical and dental residencies. In terms of addressing service shortage areas, an optional second year of training in geriatrics should be provided for the existing one year dental general practice residencies. Such a program would enhance the skills of dental general practitioners in treating the special health needs of elderly patients, and would be a step toward addressing the shortage of geriatric training for health professionals identified in the Personnel for Health Needs of the Elderly Through Year 2020 Report.

AADS recommends that these additional funds be targeted for new dental fellowships in areas of research, infectious diseases, and administration in cooperative ventures with affiliated dental schools.

AADS also believes that some of this increased funding should be used for geriatric training of dental hygienists, as recommended in the 2020 Report. Dental hygienists play a major role in the care of the institutionalized elderly, and would benefit from programs allowing them to develop clinical and academic skills in geriatrics and the treatment of the medically compromised.

(c) AIDS- AADS recommends an increased appropriation to cover increased costs due to treatment of AIDS patients. The cost of treating an AIDS patient at a VA facility varies from $18,000 to $32,000 per patient. A precise estimate of dental costs within the VA is not available, since all medical and dental supply and equipment purchases in the VA are consolidated. However, AADS has estimated that the average costs of modifying a dental school clinic (a location with exclusively dental care costs) to comply with more stringent infection control procedures is $200,000 per school. Therefore, we believe within this increased appropriation there should be some allocation for unique dental needs. Infection control requires "universal precaution methodology" for each and every dental patient appointment, markedly increasing the cost of providing dental care. The signs of HIV infection often first appear in oral regions, so that dentists are often the first health professionals to detect the disease.

These problems create an important need for continuing education for VA dentists in the detection and treatment of AIDS. Such programs should also be open to dental residents and students working in the VA, given the VA's role as a teaching site.

(d) Recruitment of Health Care Workers- AADS recommends an increased appropriation to develop programs that address the shortage of health professionals in the VA system. One area of particular concern for dental education is the supply of dental auxiliaries such as hygienists. Increased funding in this area should allow the VA to study potential health profession shortage areas in the VA, and use funds to retain such personnel by offering increased salaries, continuing education, and advanced training opportunities.

BUDGET RECOMMENDATIONS: HEALTH RESEARCH

AADS supports a total appropriation of $235.6 million for health research in the VA, an increase of 22 percent over the FY 1988 overall level. This increase is needed to offset the 4 percent decline in research funding since 1985; current VA health research funding in constant dollars remains less than the 1978 total. Costs of doing research have increased during this time, and as a result the number of merit review awards has dropped dramatically. About half of the research proposals judged to merit VA support will go unfunded this year. Our recommendation would restore the research budget to the FY 1985 level, supporting 1840 research projects. Special initiatives would be for 6 AIDS research clusters and related projects, resulting in an additional $4 million appropriation over the current services funding level. Whenever relevant, projects should be required to demonstrate a dental involvement.

AADS supports the concept of cooperative studies in which researchers at multiple sites, working under a single project investigator and protocol, gather data at an accelerated rate and/or higher volume. This furthers the validity of the research, especially when dealing with an unusual disease or treatment entities. This type of effort also draws into research projects health personnel who otherwise might not have the opportunity to participate in research, particularly if research were limited to only individual investigators working at a single site. Such projects also encourage the involvement of academic researchers at dental schools.

In order to increase the number of VA dental staff involved in individual research projects, AADS supports the career development program. This program is essential for increasing the ability of VA dentists to effectively compete for individual research awards, as it produces a better trained core of dentist-scientists in the VA. As noted in the Special Report of the GGAC (Geriatrics and Gerontology Advisory Committee), in the past VA dentists -- unlike physicians -- had not been encouraged to perform research. Career development awards are a good method of reversing this process.

CONCLUSION

AADS believes that the budget recommendations discussed above would provide the necessary level of health care and research for the nation's veteran population, and utilize resources of VA (in cooperation with U.S. dental schools) to provide better training opportunities for the nation's health professionals.

AADS thanks the committee for considering these comments.

Selective Service System

STATEMENT OF JAMES H. FELDMAN, JR., STAFF ATTORNEY, CENTRAL COMMITTEE FOR CONSCIENTIOUS OBJECTORS

Senator PROXMIRE. Our next witnesses with be testifying on the Selective Service System: Mr. James Feldman, Central Committee for Conscientious Objectors; Mr. John Stoner, Mennonite Central Committee; and William Yolton, National Interreligious Service Board for Conscientious Objectors.

Mr. Feldman, go ahead, sir.

Mr. FELDMAN. Mr. Chairman, on behalf of the Central Committee for Conscientious Objectors, thank you for giving us this opportunity to present our views on recent regulatory changes at the Selective Service.

First, I would like to say that we fully support the testimony of the National Interreligious Board for Conscientious Objectors, as well as the Mennonite Central Committee; but in the interest of time, we will limit our comments to areas not covered by them in depth.

REGULATIONS OPPOSED

Two years ago, Congress declared null and void Selective Service regulations which, in the words of the House Subcommittee on HUD Independent Agencies, "overturned long-standing Selective Service procedures" and which "compromised fundamental rights of conscience and imposed unjustifiable hardship on men seeking exemptions, deferments, and alternative service."

On July 1, 1987, the Selective Service reinstated the bulk of these regulations. At this time, we urged this committee and the Congress to void once more these Selective Service regulations and force the agency to develop a system which is fair to registrants.

I would like to highlight a few of these regulatory changes.

The first has to do with the order of call. In 1971, Congress instituted the lottery system to save men from years of uncertainty and confusion. Now, Selective Service has gutted this major reform and will now first draft those men whose deferments and exemptions have expired.

The hardship that this regulation will cause not only registrants but their families, their communities, and ultimately our nation, is wrong and unnecessary.

Next, Selective Service is removing the last vestige of civilian control from 4F determinations. One of the foundations of the Selective Service system is that it is run by civilians. Now, there is simply no way for a registrant to show his draft board that the military doctrine made an error in his evaluation, no matter how compelling the civilian medical evidence.

CONSCIENTIOUS OBJECTORS HURT

The injustice is clear. Conscientious objectors are likely to be hurt even more. Many will refuse to be evaluated by military physicians and be required to perform alternative service despite serious medical problems which would have entitled them to 4F classifications.

Conscientious objectors are hurt in other ways as well. If the CO applicant misses his personal appearance, he risks having the board rule that he abandoned his claim. When an applicant for any other classification misses a personal appearance, the board will decide its claim based upon evidence in his file.

If the Selective Service won't automatically reschedule the missed personal appearance, it must at least afford conscientious objectors the same rights that it affords applicants for other classifications. During the Vietnam era, and even before that, CO claims could be decided without personal appearances.

Why is the Service allowed to replace this long-standing policy with one that is unfair to conscientious objectors?

For CO's doing volunteer work overseas, the situation is even worse. The Selective Service will not pay transportation costs to and from these required personal appearances.

Why is Selective Service permitted to place this price tag on conscience? Selective Service now gives a registrant only 7 days' notice to report for physical examinations. Since registrants have 10 days to report any change of address, a registrant can now abandon his claim, which is the price for not reporting for the physical examination, even before he is required to send in his change of address notice.

How is a registrant to comply with Selective Service's orders without adequate notice?

In addition to giving registrants less notice and more chances to unintentionally abandon their claims, Selective Service has also decided to give them less information about their rights. The agency will no longer post the names of counselors in area offices.

REGISTRANTS' RIGHTS

The agency has done next to nothing to inform registrants of their rights, and now they are going to do even less.

Why is Selective Service so afraid of registrants' learning their rights? Selective Service must be made to realize that it must treat the men who register with it fairly.

We ask that Congress once more void these regulations. Better yet, since the draft registration was reinstituted in response to the Soviet Union's invasion of Afghanistan, now that the Soviet Union is pulling out of the country, we believe that it is time to defund Selective Service's registration program entirely.

Thank you once more for this opportunity to present our views.

Senator PROXMIRE. Thank you, Mr. Feldman.

[The statement follows:]

STATEMENT OF JAMES H. FELDMAN, JR., STAFF ATTORNEY, CENTRAL COMMITTEE FOR CONSCIENTIOUS OBJECTORS

I am James H. Feldman, Jr., Staff Attorney for the Central Committee for Conscientious Objectors (CCCO). CCCO was founded in 1948 to protect the rights of individuals conscientiously opposed to participating in war. Today we are the nation's largest draft counseling organization, dedicated to helping people and providing reliable information concerning registration and the draft.

While CCCO is now and has from its inception been opposed to military conscription, so long as the Selective Service System exists, we will work to protect the rights of those individuals who by law are required to register with it. In this spirit we have presented testimony before this Committee in previous years, and it is in this spirit that I present this testimony today.

I understand that the National Interreligious Service Board for Conscientious Objectors, the Mennonite Central Committee, the Most Reverend Walter A. Sullivan, the Bishop of the Roman Catholic Diocese of Richmond, the Friends United Meeting, the Church of the Brethren, and Professor Gordon H. Zahn have also submitted testimony concerning Selective Service. CCCO fully supports the testimony of these groups and individuals. In the interest of time, we will limit our comments to areas we understand will not be covered in depth by them.

Last year CCCO raised with this Committee our concern that Selective Service has not done enough to protect the rights of registrants. Two years ago the House Appropriations Committee noted in its Report that "[t]he Committee objects to the recent regulatory changes which overturn longstanding Selective Service procedures. The Committee believes these changes compromise fundamental rights of conscience and impose unjustifiable hardship on men seeking exemptions, deferments, and alternative service. The Committee also believes that the Selective Service did not act in good faith either when first publishing these amendments for public comment or in responding to those comments. Therefore, bill language has been included which, upon enactment of this bill, renders null and void the amendments to the Selective Service regulations which were published in the *Federal Register* on May 14, 1986, and became effective on June 3, 1986. The Senate concurred in this judgment, and these regulations were voided.

While we had hoped that this Congressional action would give Selective Service the incentive adequately to protect the rights of registrants, over the past two years the agency has sought to reintroduce many of these objectionable regulatory changes.

One of the voided regulations would have required conscientious objectors to be examined by military doctors. Section 1630.16(b) now allows

CO applicants to waive the requirement. While this provision appeared to solve this problem, through the Freedom of Information Act, CCCO recently received information from Selective Service indicating that the agency has developed plans for "Preinduction Examination and Classification of Selective Service Registrants" which would require preinduction physicals *prior* to submission of claims for exemptions, thus negating the salutary effect of 1630.16(b).[1]

Another voided regulation would have prevented COs from performing alternative service with religious bodies which require employees to sign statements of faith. In the December 17, 1987, *Federal Register,* Selective Service reproposed this provision.

The bulk of these previously voided regulatory changes, however, were reinstated in the July 1, 1987, *Federal Register.*

NEW ORDER OF CALL UNFAIR

Under rules now in effect, individuals whose exemptions or deferments have expired will be among the first to be inducted (Section 1624.4 (c) and Section 1624.7). This change is not mandated by the Military Selective Service Act (MSSA), and is contrary to the will of Congress. A 20-year-old man deferred for medical reasons should not have to wait 15 years to know that he is not first in the order of call should his health improve. In 1971, Congress amended the MSSA to add the lottery system in an attempt to end such uncertainty:

> "All men with . . . high . . . numbers can seek jobs without their employers or themselves worrying about interruption.
>
> "[C]ommunities have several layers of protections, with the youngest and occupationally least critical men drafted first."

(Report No. 92-82, House Armed Services Committee Report, page 11.)

Contrary to the representations of Selective Service, Section 6(h) of the MSSA does not require this change. That section provides only that persons *"deferred"* under *"this section"* shall remain *"liable"* for induction until age 35. "Liable," however, does not translate into first in the order of call. This is the first time Selective Service has ever given it this interpretation.

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[1] These preinduction examination and classification plans appear to overstep Selective Service's mandate to prepare for a mobilization draft. Without more explicit Congressional direction, Selective Service should not be permitted to expend funds to prepare for a peacetime draft.

CIVILIAN CONTROL REMOVED FROM 4-F DETERMINATIONS

Selective Service also violated the intent of Congress when it removed the last vestige of civilian control from 4-F (unfit for military service) determinations (Section 1630.44 and Section 1633.1). Section 4(b)(3) of the MSSA provides that "local boards shall . . . have the power . . . to hear and determine, subject to the right of appeal to the appeal boards herein authorized, *all* questions or claims with respect to inclusion for, or exemption or deferment from, training or service under this title." Importantly, such local boards and appeal boards must be *"civilian"* agencies. (Emphasis added.)

While Section 4(a) of the MSSA does provide that registrants are to be examined under medical standards "prescribed by the Secretary of Defense," it does not mandate that the Secretary of Defense be the sole arbiter of whether those standards have been met. Selective Service's new interpretation is unfounded.

The regulation will have a particularly deleterious effect on COs. Those COs who waive the physical will be forced also to waive their right to a 4-F classification. If COs could be examined by *civilian* medical personnel, according to Selective Service's own estimates, up to half of them would receive 4-F classifications.

CONSCIENTIOUS OBJECTORS PENALIZED

Selective Service has deleted the automatic rescheduling of personal appearances before local boards for COs who miss their first appearance (Section 1648.4).

This protection is necessary so long as CO claims *require* personal appearances. Applicants for other claims who miss their personal appearance will still have their claims decided by their boards, based on evidence in their files. If Selective Service is going to do away with the automatic rescheduling, it should allow CO claims to be decided on evidence in the applicant's file as it has in the past.

Selective Service continues to show its insensitivity to the rights of registrants in general and conscientious objectors in particular with Section 1657.6, under which the agency will not pay transportation costs for overseas registrants to and from personal appearances before a local or appeal board. In the case of COs, this regulation is particularly egregious since CO claims will not be granted without a personal appearance. This regulation puts a price tag on conscience and amounts to religious discrimination. The failure to provide transportation costs for other claimants amounts to economic discrimination. Many claimants undoubtedly will be drafted simply because they could not afford to attend their hearing. While their cases will be decided based on the information contained in their files, in most cases the presence of the claimant at his hearing would strengthen his case. Cases should be decided on their merits, not on whether the claimant has the money to attend a hearing. Not all overseas registrants can afford to travel to the United States on short notice or without financial assistance. Many, for example, have traveled overseas at some sacrifice to themselves to perform voluntary relief work.

APPEAL RIGHTS DIMINISHED

Under Section 1651.1, registrants are now for the first time unable to appeal unanimous denials of claims for administrative classifications. During the Vietnam war, many unanimous decisions by local boards were overturned on appeal. It is easy to see why this could happen in the future as well. Board members will be making their decisions based solely on secondary source material provided them by Selective Service. For some reason, the agency has chosen not to supply Board members with copies of the MSSA and Selective Service Regulations. In the event that the RIMS (Registrant Information and Management System) Manual incorrectly interprets the law or a regulation, it would be unlikely that any board member would be aware of this. It is not a farfetched notion that the RIMS Manual might be outdated. It is outdated today. Numerous changes in regulations have not yet been incorporated into RIMS.

Unless registrants are permitted to appeal all denials of administrative classifications, many will be faced with the choice of being illegally inducted and incurring the expense of filing a petition for a writ of habeas corpus, or refusing induction and raising its illegality as a defense to a criminal indictment.

ASSISTANCE TO REGISTRANTS CUT BACK

With the deletion of Section 1618.3, Selective Service has made it even more difficult for registrants to understand and effectively exercise their rights. That section previously called for the posting of the names and addresses of draft counselors in Area Offices.

Registrants will need assistance once inductions begin. Our experience of forty years leaves us no room to doubt this. While Selective Service may plan to offer such assistance, there are several reasons why this response is inadequate. First, many registrants will instinctively distrust any advice given them by the very agency which is trying to draft them. Second, registrants ought to have several sources of assistance. Independent counsel might legitimately interpret Selective Service law differently or provide a more complete list of options than would advisors provided by Selective Service. While independent counselors may use other means to make the availability of their services known, given the short amount of time registrants have to make important decisions, it would be useful for them to be able to get such a list directly from Selective Service.

Given Selective Service's abysmal track record in helping registrants understand and exercise their rights, and the short amount of time young men will have to make these important decisions, this proposal will no doubt result in many men being wrongfully drafted.

INADEQUATE NOTICE TO REGISTRANTS

Registrants who have applied for reclassification many now be ordered to report for examination with a minimum seven days notice from the date the order is "issued." If a registrant fails to report for such examination, the board "will determine that he has abandoned his claim" (Section 1624.10).

Seven days' notice is clearly inadequate, especially given the consequences of a failure to report. Since Section 1621.1 gives men 10 days to notify Selective Service of a change of current mailing and permanent address, a registrant can now "abandon" his claim even before he is legally required to send a change of address notice. The situation is worse for registrants living overseas. How is a registrant to comply with Selective Service orders when he does not get adequate notice?

In addition to providing more notice, this regulation should allow registrants to reschedule examinations, rather than force them to "abandon" their claims.

Two recent additions to the list of unfair Selective Service regulations were not among those voided in 1986.

REGISTRANTS' PRIVACY NOT PROTECTED

Section 1698.2 allows certain individuals and governmental entities to request advisory opinions of Selective Service relative to whether a named individual is required to register. While advisory opinions can help registrants in some cases, their availability must be regulated so as to provide their potential benefits while protecting registrants' privacy.

Governmental agencies should not be allowed to request advisory opinions without the consent of, or at least notice to, the man in question. Selective Service has offered no justification of this unwarranted violation of individual privacy.

APPELLATE RIGHTS LESS MEANINGFUL

Section 1605.6 no longer contains provisions providing for the independence of the National Appeal Board. This provision used to provide that the "National Appeal Board shall in all respects be independent of the Director of Selective Service except that the Director. . . shall provide for the payment of compensation and expenses of members of the National Board." This section now simply reads: "[t]he Director shall pay the expenses of the members of the National Appeal Board." This loss of independence significantly diminishes the rights of registrants by giving the appearance that the National Appeal Board will merely be a rubber stamp for the agency's actions.

CONCLUSION

We thank you for your efforts to bring some fairness to the system being created by Selective Service. While Congress' strong message of two years ago to Selective Service has resulted in positive changes, many problems remain. We urge you to take a hard look at the issues we have raised

Thank you once more for this opportunity to present our views.

STATEMENT OF JOHN K. STONER, EXECUTIVE SECRETARY, U.S. PEACE SECTION OF THE MENNONITE CENTRAL COMMITTEE

ALTERNATIVE SERVICE WORK

Senator PROXMIRE. Mr. Stoner?

Mr. STONER. I represent the Mennonite Central Committee, which during World War II and since then has supervised alternative service work for thousands of Mennonite and other conscientious objectors.

I am here today to express concern about a particular regulation now reintroduced by Selective Service, which would bar alternative service employers from requiring any statement of faith on the part of an alternative service worker. There are several reasons why we find this a very troublesome regulation.

The first is that the regulation would establish precedent in which the Selective Service System in the 1950's and 1960's, for example, approved hundreds of alternative service assignments with organizations which did require a statement of faith.

Again, this regulation inhibits the First Amendment by refusing to assign alternative service workers to religious employers because of a required commitment to religious belief. This shows a favoritism toward nonreligious employers.

The regulation furthermore is contrary to the stated purpose of Selective Service, which is to create more alternative service opportunities; but in the discussion in the Federal Register on this regulation, the Selective Service says that this regulation would inhibit alternative service employment opportunities.

We believe very much to the contrary; it would restrict alternative service employment opportunities because, in the past as I said, the Mennonite Central Committee, for example, has employed thousands of alternative service workers, and those jobs would not now be approved.

Finally, there is a very fundamental contradiction at the heart of this regulation. The regulation has the government in the position of requiring religious commitments for the classification of conscientious objectors and refusing the requirement of any religious commitment for the employment of conscientious objectors.

So, you would have the government in the position of applying the religious test and refusing the church the opportunity to apply a religious test.

I will conclude by saying that the position of the Mennonite Central Committee here, and other religious organizations concerned about this, is not in any sense to restrict the opportunity for alternative service employment to persons who are willing to affirm some religious affirmation, but only to say that alternative service should also be available to such persons. Thank you.

Senator PROXMIRE. Thank you. sir.

[The statement follows:]

STATEMENT OF JOHN K. STONER, EXECUTIVE SECRETARY, U.S. PEACE SECTION OF THE MENNONITE CENTRAL COMMITTEE

Summary

The functioning of the Selective Service System is the subject of this testimony. The Mennonite Central Committee is requesting the aid of the committee to change regulations proposed by the Selective Service System which would radically alter previous arrangements for the employment of conscientious objectors in alternative service work. The proposed regulation would (1) bar faith-based alternative service work and (2) use military officers in the administration of alternative service. We believe that both of these regulations violate the intent of Congress. We urge the committee to withhold or reduce funding for the Selective Service System until these regulations are changed.

Text

I thank the subcommittee for the opportunity to testify regarding appropriations for the Selective Service System. I am John Stoner, Executive Secretary of the U.S. Peace Section of the Mennonite Central Committee (MCC) in Akron, Pennsylvania. The Mennonite Central Committee is an association of twelve Mennonite and Brethren in Christ church bodies which have a combined membership of more than 200,000. During World War II, and since then, MCC has supervised alternative service work for thousands of Mennonite conscientious objectors. We are distressed that Selective Service now intimates suspicion of the integrity of this history of the Mennonite Central Committee and similar agencies.

Our testimony addresses two issues in the current operations of the Selective Service System: (A) the bar to faith-based alternative service in regulations proposed on December 17, 1987 and (B) administration of the regulations by military officers.

A. THE BAR TO FAITH-BASED ALTERNATIVE SERVICE

We urge the committee to counsel Selective Service to withdraw Section 1656.5 (a)(1)(iii) which would bar employers of alternative service workers from requiring any commitment to a religious belief or doctrine, for the following reasons:

1. The regulation reverses established precedent in which the Selective Service System during the 1950's and 1960's approved hundreds of alternative service assignments with organizations requiring a statement of faith.

In light of this history, the first paragraph of the SSS discussion of Section 1656.5 (a)(1)(iii) on page 47949 of the Federal Register is perplexing. Is it accurate to describe a prohibition which was only introduced in December 1985 as a "long-held policy?" We are frankly troubled that some Selective Service regulatory proposals reflect so little awareness of established practices and previous experiences.

2. This regulation inhibits the free exercise of religion, in apparent violation of the First Amendment. The refusal to assign alternative service workers to religious employers because of a required commitment to religious belief discriminates against religious employers in favor of non-religious employers. Likewise it discriminates against the alternative service worker who would choose to do his work with a religious employer.

The Constitutional question here is similar to that involved for educational institutions which provide education for individuals who are required by law to attend school. Educational institutions which require religious commitments are approved by the government as providers of education. One would expect that employers of alternative service workers who require religious commitment would also be approved.

3. This regulation violates the intent of Congress expressed in the 1971 revision of the Military Selective Service Act, in which the legislative intent stipulated that "local arrangements under which alternative service is now performed with religious and other organizations will not be needlessly disrupted." The implementation of this regulation would be a glaring disruption of established precedent for Mennonites and many other organizations.

There is no legislation which purports to prohibit the employment of alternative service workers by organizations which require as a condition of that employment a commitment to some religious belief or doctrine. The legislation requires only that alternative service work shall be civilian work contributing to the national health, safety, or interest.

4. The regulation reflects an erroneous assumption that the alternative service employer is an agent of the government. As William Ball said in his April 11, 1984 legal memorandum, the legal definition of agent is "the fiduciary relation which results from the manifestation of consent by one person to another that the other shall act on his behalf and subject to his control and consent by the other so to act." A further aspect of the definition says that the agent has the authority to bind the principal with respect to third parties. The elements of this definition, severally and collectively, do not accurately define the role of an alternative service employer in relation to the Selective Service System.

5. Contrary to the "discussion" in the Federal Register, the regulation would not prevent a restriction of opportunities for alternative service employment, but would rather create a restriction by forbidding employment with a given class of employers.

In the past the Mennonite Central Committee has provided alternative service employment for large numbers of conscientious objectors. Between 1965 and 1975, 3,876 men did alternative service work in MCC programs. No study has come to our attention which indicates that the work of those men failed to meet the basic criteria of contributing to the national health, safety or interest. All of these work opportunities would now be banned under the proposed regulation.

6. There is an implicit contradiction at the heart of the regulation. The regulation has the government requiring commitments which may include religious commitments for the classification of conscientious objectors (Form 22) and forbidding the church to require religious commitments for the employment of conscientious objectors. The incongruity of this is puzzling.

In order to qualify for the classification of conscientious objector, a registrant must demonstrate sincere commitment to religious belief, or moral or ethical belief which occupies the same place as religious belief in his life. It would be a strange mixing of roles to have the state administering a test of religious belief for the classification of conscientious objectors and forbidding the church use a test of religious belief for the employment of those same conscientious objectors.

In addition, several of the items in the Federal Register "discussion" of the regulation call for comment. The long paragraph on page 47949 cautions against misunderstanding the role of the Director of Selective Service System in the administration of the alternative service program. Our objection to the regulation does not arise from a misunderstanding of the Director's role, but rather from a differing interpretation of "the statutory requirement," which we maintain does not prohibit job opportunities with employers who require some commitment to religious belief or doctrine.

It is not clear what "administrative burdens" would fall on the alternative service office because of employment opportunities with religious employers requiring some commitment to religious belief. On the face of it, the administrative burden of Selective Service is lessened by the maximum availability of employment opportunities. What are the "additional referrals of prospective alternative service workers" which would have to be made? As for screening, the prospective alternative service workers would screen themselves as far as applying for work with employers who require some religious commitment. In any conceivable scenario, it would be a most exceptional case if a prospective worker sought assignment with an employer whose standards of employment were objectionable to the individual. The possibility of such exceptional cases is surely no basis for denying a whole class of potential employers and alternative service workers the type of employment opportunity which they would choose to provide and use.

There is reference to "substantial but inappropriate pressures upon perspective [sic] alternative service workers," and an ominous warning that "churches could use the arrangements to 'keep the lads in the fold' which would violate their rights under the...First Amendment." Again, we are not aware of any studies of alternative service in the 1950's and 1960's which corroborate this hint of ulterior motive on the part of church agencies. What would be the nature and form of this pressure which employers or churches could exert? Has it become the role of the Selective Service System to protect young men from undue influence from churches?

The discussion says that "the Constitution and numerous federal statutes express a policy that prohibits discrimination on the basis of religious belief or doctrine." That prohibition, however, is a prohibition addressed to the government and its agencies, not to churches. To address that prohibition to churches would violate the Free Exercise of Religion clause of the First Amendment. The interpretation of the Constitution and federal statutes reflected in this regulation would close down hundreds of schools which currently provide state-mandated education, as mentioned earlier in this comment.

We are convinced that the Amos case decided by the Supreme Court (1987) does not support the position taken by this regulation.

For these reasons we urge the elimination of the regulation limiting alternative service employers to "those who do not require as a condition of the employment of an ASW his commitment to any political or religious belief or doctrine or his membership or nonmembership in a political or religious group."

B. ADMINISTRATION OF THE REGULATIONS BY MILITARY OFFICERS

A review of conscription was initiated in 1979. At that time religious groups testified to the problem created for some religious conscientious objectors by the military jurisdiction within the Selective Service System. Some CO's, as a matter of religious belief, cannot accept military jurisdiction because they see it as a direct contradiction to the rulership of God in their lives. In 1979 Congress amended the Military Selective Service Act by adding Section 1 (f): "The Congress further declares that the Selective Service System should remain administratively independent of any other agency, including the Department of Defense."

The alternative service placement process would be administered by military officers according to current SSS regulations. This means that military officers would be determining whether specific alternative service jobs qualify on the basis of the banned religious belief or doctrine. We consider this an unacceptable involvement of the Department of Defense in the administration of alternative service. We recommend that no funds be appropriated for military personnel in the operation of alternative service.

I thank the committee for this opportunity to testify. If there are any questions to which our organization can respond, I welcome them.

STATEMENT OF L. WILLIAM YOLTON, EXECUTIVE DIRECTOR, NATIONAL INTERRELIGIOUS SERVICE BOARD FOR CONSCIENTIOUS OBJECTORS

Senator PROXMIRE. Mr. Yolton?

Mr. YOLTON. Mr. Chairman, I am L. William Yolton, the executive director of the National Interreligious Service Board for Conscientious Objectors. I am a Presbyterian minister with special training in religious ethics.

NISBCO is a coalition of historic peace churches with most of the major religious bodies in the United States. It focuses on defending and extending the rights of conscientious objectors, the CO's; and NISBCO has, over the years, provided the coordination of the service provided by conscientious objectors and has developed an expertise in matters about the military draft, military manpower, and national service proposals.

Our testimony today is very selective. Last year, we covered the waterfront on the background of the issues we had with Selective Service. This time, I want to stress that one little regulation, the one that bars the choice of faith-based alternative service.

FAITH-BASED ALTERNATIVE SERVICE

Two years ago, this subcommittee joined with the House Subcommittee on HUD-Independent Agencies in declaring the regulation null and void, together with pages of other regulations that came with it; and we want you to do it again.

Section 1656(5)(a) must be eliminated, one way or another. Our written testimony is narrowly focused on the matter, and I shall give background from some of the main points we make. And I presume you will enter this into the record.

You will note that the summary actions we request begins with the suggestion that we must have the appropriation power to make the Selective Service withdraw the offending regulation; and barring that, they can nullify the whole set. What does the regulation do?

It changes the long-standing policy of Selective Service with respect to the placement of conscientious objectors in programs of religious agencies; this includes Catholics as well as Mennonites.

Since 1940, when the entire scheme of alternative service programs began and was again modified in 1951, to provide for what is basically the commonly accepted program for conscientious objectors that you and I know, religious agencies have provided employment to alternative service workers satisfying the requirement of the statute and congressional intent that it be under civilian direction in the maintenance of the national health, safety interests. It worked well, or fairly well.

The arrangements were modified at the end of the Vietnam war by moving the responsibility for finding jobs from local boards to the national director. This eliminated the great variability among local boards in their somewhat informal understanding of what was approved, and some of them were punitive.

And it gave the national office the responsibility it already assumed informally, anyhow.

Now, under this administration—and it has been going on for a while—the headquarters of Selective Service has been negotiating with employers and executed deals with some organizations to provide approved jobs for CO's. It has to be in place before draft starts, you see; all that has to be arranged.

Without warning, in 1983, Selective Service told the Mennonite Central Committee that they no longer qualified. The Mennonites and NISBCO responded trying in every way, shape, and manner to resolution, to preserve the traditional arrangements, as well as congressional intent.

At the request of the Selective Service System, the Mennonites provided a careful legal opinion refuting the main point of Selective Service, which was that religious bodies are agents of the government, when they accept even their own conscientious objectors into employment. Now, this doctrine of agency Selective Service has already used tried to resurge, and the churches have always opposed it successfully. It has never had any legal standing.

For us, it clearly violates the separation of church and state. The Mennonites to this day have never received a reply to their opinion letter which the Selective Service System requested; and NISBCO tried to meet with the officials of the Selective Service System but was rebuffed by refusal even to meet with me.

Senator PROXMIRE. Could you wind up in about a minute, sir?

Mr. YOLTON. Yes. All Selective Service employees and volunteers were instructed not to talk to us, and they circulated a speech by the Selective Service System defaming us as in league with the Communists and engaged in terrorism and vandalism. Now, things are changed at Selective Service.

There is a new director, Samuel K. Lessey, Jr., and I have talked to him. The report of our conversation is in the testimony. I think he wants to treat conscientious objectors fairly; but the very regulation we opposed was issued on the day he was confirmed. So, he didn't have a chance to review it.

We want you to negotiate with the Selective Service, or at least get us into the negotiation, so that, under this new climate, we can get a satisfactory regulation, not only this regulation, but the rest that are in contention.

Senator PROXMIRE. Gentlemen, thank you very, very much. As you know, this is an absolutely critical rights issue; and I commend you for making the effort that you are making. It is in the Appropriations Committee. As you know, we pass on whether they should have money at all or have more or have less than they had last year or than the administration is calling for.

So, your appeal should also be made, if you can make it, to the Armed Services Committee and the Judiciary Committee and to the courts.

Mr. Yolton. We are in court on some of this. We wanted to have standing. To start the process in court, you have to have standing to do it. That is a problem; there is not draft right now.

Senator Proxmire. All right. Gentlemen, thank you very, very much. I appreciate your testimony.

PREPARED STATEMENTS

We would like to insert into the hearing record at this point a number of statements received from interested organizations. So without objection, they will appear at this point in the hearing record, together with the statement of the National Interreligious Service Board for Conscientious Objectors.

[The statements follow:]

STATEMENT OF L. WILLIAM YOLTON, EXECUTIVE DIRECTOR, NATIONAL INTERRELIGIOUS SERVICE BOARD FOR CONSCIENTIOUS OBJECTORS

REQUEST TO THE SUBCOMMITEE ON HUD-INDEPENDENT AGENCIES

Suggested committee actions:

1. The Subcommittee of the Senate should use its appropriation powers to gain the assent of the Selective Service System to withdraw the proposed regulation, 1656.5(a)(1)(iii).

2. Urge the Selective Service System to negotiate with affected parties other regulations which were previously declared "null and void."

3. Absent that result, provide for the arbitration by a third party of the disagreements over the regulations.

4. Or, again nullify the regulations which were reissued without change since 1986.

5. Defund Selective Service to stand-by status, in light of the fact that in eight years the agency has not been able to produce a viable set of conscription regulations.

The Interest of NISBCO:

The National Interreligious Service Board for Conscientious Objectors represents thirty-five religious bodies who comprise the membership of its Consultative Council. It also interprets the interest of several other religious bodies who from principle do not formally join in such coalitions. Founded by the historic peace churches in 1940, NISBCO is the oldest and most broadly representative interreligious association in America. It now includes Catholics, Protestants, and Jews in common support of conscience and of those conscientiously opposed to participation in war.

The principal activity of NISBCO is the provision of counseling and counselor support through direct counseling and the provision of information to our supporting constituents and to the general public. We are concerned not only about those provisions in law and their administration which are specific to conscientious objectors, but also about what sort of conscription system will emerge if we have an emergency mobilization, or if we return to a peacetime draft.

Mr. Chairman, NISBCO thanks the committee for this opportunity to testify. In 1987 our testimony provided background for this committee to understand the problems that agencies such as ours have with the devlopments in Selective Service law and administrative practice. The problems are serious enough that in 1986 this Subcommittee on HUD--Independent Agencies concurred with the House Subcommittee in legislation that declared *null and void* pages of Selective Service regulations that had been promulgated in the *Federal Register*.

We are quite dismayed at the reappearance in the *Federal Register* of almost all the regulations that were nullified. Of particular importance to us is the vehemence with which Selective Service has insisted on prohibiting faith-based alternative service. Under this proposed regulation, those conscientious objectors who have demonstrated the sincerity of their religious beliefs to the satisfaction of a local Selective Service claims board cannot express those beliefs in their choice of alternative service. NISBCO believes that this prohibition is illegal under the statute and under the Constitution.

Our further concern is that re-promulgation of the regulations nullified in 1986, without reference to the nullification, leaves onerous regulations in an undetermined legal status. Unless the legal status of these regulations is resolved, Selective Service will be subject to court challenges should inductions ever be necessary. We have serious questions as to the adequacy with which the agency over the last eight years has pursued its congressional mandate to prepare for an emergency mobilization.

NISBCO supports the collateral testimony of the Central Committee for Conscientious Objectors, and the Mennonite Central Committee. We also support the written testimony to be submitted by the Most Reverend Walter F. Sullivan, the Bishop of the Roman Catholic Diocese of Richmond; The Friends United Meeting; the Church of the Brethren; and Prof. Gordon C. Zahn. Their testimony corroborates our expressions of concern.

I. The reissue of the ban on faith-based alternative service is impermissible under the statute and the Constitution.

Selective Service has issued new regulations (52 Fed. Reg. 8889, March 20, 1987, and 52 Fed. Reg. 24453, July 1, 1987) that re-institute many of the rules which were explicitly declared "null and void" in the 99th Congress. P.L.99-591, 100 Stat. 3341. At that time, the House Subcommittee on HUD – Independent Agencies said "these changes compromise fundamental rights of conscience and impose unjustifiable hardship on men seeking exemptions, deferments and alternative service." The Subcommittee "believe[d] that the Selective Service did not act in good faith either when first publishing these amendments for public comment or in responding to these comments." H.Rep. No 99-731, 99th Cong., 2d Sess. 53 (1986).

Our highest concern is that the prohibition of some traditional placements for conscientious objectors (32 CFR § 1656.5(a)(1)(iii)) is proposed again. 52 Fed. Reg. 47949, December 17, 1987.

Congressional Intent

As we have previously testified, the banning of traditional religious employers would prevent such religious bodies as the Mennonite Central Committee and the Friends United Meeting from accepting alternative service workers into their programs. Their elimination as employers of alternative service workers will reduce the available pool of placements, which has been of concern to Selective Service in the past. In fact, it was this concern which prompted Selective Service to come to the Mennonites and to NISBCO in 1952 and 1953 for our help in placing COs. Selective Service has not shown how these arrangements with religious bodies, which were first negotiated at the founding of NISBCO in 1940, diminished the availability of jobs or complicated placement.

The **congressional intent** was clear when the responsibility for finding jobs for COs was moved from the local board to the Director: "local arrangements under which alternative service is now performed with religious and other organizations will not be needlessly disrupted." Conf. Rep. No.92-4323, July 30, 1971, Difference No. 4, page 21. In coping with the varying competence of local boards, the Congress did not intend to change the long-standing provision for religious organizations to provide alternative service.

The legal doctrine Selective Service asserts is that religious bodies (churches) become agents of the government when they accept alternative service workers into their employ. But, the employers bear the cost of the CO alternative service workers and supervise them according to their own standards. The General Counsel's explanation in the *Federal Register* is that the employers can do nothing that the government is forbidden to do. NISBCO has opposed this view of "agency" since 1943. Taken literally, the churches would have to stop conducting worship, praying, or teaching religion, if they accepted alternative service workers into their programs.

Free Exercise of Religion

The regulation is patently contrary to the **free exercise of religion**. With this regulation, Selective Service is requiring that religious bodies alter their faith-based hiring practices, or be prohibited from hiring conscientious objectors performing alternative service. This regulation also tells the religious conscientious objector that he may choose any job which meets the statutory criteria, unless that position is one with a compatible religious body which, as a matter of religious practice, places requirements of belief or doctrine in connection with the employment.

It is a well-settled constitutional principle that where the government conditions an important benefit or opportunity on the abandonment of religious principle, it has overstepped its constitutional limitations. Conscientious objection based on religious training and belief should not be restricted beyond the employment conditions presently required under the statute.

A significant number of conscientious objectors want to express in their work the religious values that they were required to prove to Selective Service to qualify as COs. This regulation denies them a choice of an explicitly religious setting in which the work product would still qualify as in the "maintenance of the national health, safety, or interest." Their beliefs should have opportunity to be fulfilled in their work and living situation.

Such an accommodation to pluralism and free exercise is current policy in all the other instrumentalities of the government. In the provision of chaplaincies in the military and in correctional institutions, the free exercise of religion by those who are compelled to be in those institutions is supported and taxes are spent for those services. The compulsory education laws have been upheld, but the requirement that children go to school does not turn the private schools into government agents. Even the provision of limited aid to those schools does not turn church schools into "state schools."

In other areas the present administration has been a champion of religious freedom. Given the special exemption for religious employers found in the Civil Rights Act of 1964 and the decision of the Supreme Court in *Corporation of the Presiding Bishop of the Church of Jesus Christ of Latter-day Saints v. Amos*, 107 S.Ct. 2862 (1987), it would appear that no one but the office of the General Counsel of Selective Service believes there are legal grounds for this regulation. In *Amos* the Court upheld the religious employer exemption in Title VII of the Civil Rights Act. In an *obiter dictum*, the General Counsel claimed *Amos* does not apply to Selective Service in relation to alternative service employers. It fits with what we see as Selective Service practice over the years to ignore legal precedent guaranteeing the rights of COs and other registrants as too inconvenient.

Despite the process of publishing the regulation again for comment, Selective Service has not withdrawn the regulation since it was nullifed. It is currently in the *Code of Federal Regulations*, having never been rescinded there. The House Subcommittee's opinion about the lack of good faith of Selective Service in issuing these regulations seems to be corroborated.

Selective Service received over three hundred fifty letters and technical comments on the regulation this year. Most of them repeated settled arguments against it. Nothing has changed from the last promulgation. The explanation provided with the reissuance has not given any new rationale for the regulation since Congress nullified it.

I have begun conversations with the Director of Selective Service, Samuel K. Lessey, Jr., about the regulation, and he has been courteous in his disagreement. He and I agree that Selective Service should not discriminate in assigning alternative service workers. I have pointed out that there are sufficient provisions for fairness built into the regulations despite the effort of the General Counsel to remove one of them. Lessey suggested that a compromise be found on the regulation, and I averred that no compromise can be made with free exercise or with the statute. The suggestion that a religious tenet exemption be substituted is merely to assert the contrary to the regulation, and therefore we would be better off with no change in the arrangements that have worked so well for so long.

II. Other nullified regulations which are reinstated and remain objectionable

Selective Service is operating in the safety of obscurity; but, when and if there is a need for it, the system will be so hopelessly snarled in contradictions between its regulations, its administrative procedures, and the authorizing statute that one or two court cases would stop inductions entirely, and the major mobilization scheme would be inoperative. Regulations that are null and void by statute are of doubtful legality. The whole point of the last eight years of registration would be lost.

Some of the changes in regulations are improvements. Other regulations diminish the fairness of the operation of the Selective Service System, even though Congress intended to increase fairness when the Act was amended in 1971 by adding § 22, "to guarantee to each registrant asserting a claim before a local or appeal board, a fair hearing...."

Other regulations which were reissued and to which we object are:

1. A unique discrimination against conscientious objectors who are overseas is embodied in a requirement to travel at their own expense for a mandatory personal appearance to have their claims heard, § 1657.6(b). It constitutes a tax on conscience. Some COs would be working at subsistence

level in overseas service projects, would lack the funds for such travel, and would lose their right to be classified. The government, of course, does pay for travel to be inducted. § 1657.6(a).

2. All COs are subject to a requirement that without the registrant's request which is required in other judgmental classifications they are automatically scheduled for a mandatory personal appearance. If the registrant cannot appear at the hearing, his hearing will not be automatically rescheduled. If the local board does not like the reason given, his claim can be dismissed without explanation or due process hearing.

3. The independence of the Presidential Appeal Board from the Director of Selective Service has been eliminated. § 1605.6(g).

4. Elimination of a listing at the area offices of volunteer advisors, the last vestiges of independent assistance to registrants. § 1618.3.

5. A new order of call would subject registrants 26 to 35 who have lost a deferment or no longer qualify for an exemption to being drafted first, contrary to Congressional intent and previous regulations, which implemented a youngest first order of call while preserving the extended liability of those who had held deferments (not exemptions). § 1624.4. See also § 1624.3.

6. A registrant can have his claim for 4-F "reviewed" by the local board, as with other administrative classifications made by compensated employees of the Area Office. But the local board can do nothing about it. §§ 1633.1(e) & 1633.1(f). This restriction is contrary to the statute. The statute accords the local board the "power...to hear and determine...all questions or claims with respect to inclusion for, or exemption or deferment from, training and service under this title...." MSSA, § 6(h).

7. No appeal can now be made from a unanimous decision of a local board in its review of an administrative claim, though such appeals in the past have shown error by the local boards. § 1633.2(d).

An additional matter of concern to NISBCO is that the Claim Documentation Form — Conscientious Objector, Form 22, has not been published, its approval by OMB has expired as of March 31, 1988, and, furthermore, a part of its definition of conscientious objection has been repeatedly rejected by the courts.

III. Conclusion

1. We urge this committee to use its appropriation powers, perhaps to deny a portion of the funds to Selective Service, until,
a. § 1656.5(a)1)(iii) is withdrawn; and,
b. the disputed regulations, including ones that have previously been declared "null and void," are reviewed in good faith with those affected, as is the case with other regulatory agencies. The provision of arbitration services should be considered, if necessary.

2. Absent that process, the offending regulations should again be nullified.

3. This committee could recommend that unless Selective Service is prepared to make specific guarantees of fairness and due process, and to issue regulations consistent with such guarantees, the entire Selective Service System be put on standby again. Selective Service reports annually that it is prepared for a draft, when it is not. Selective Service has been unable to produce a workable draft in the course of eight years. Since there is authority in the law for expedient promulgation of regulations in an emergency, the liberty of young people could be advanced, and a small reduction in the deficit could be achieved without impairing national security any more than it has already been impaired by the administrative chaos that is Selective Service.

STATEMENT OF FRIENDS UNITED MEETING

RECOMMENDATION TO THE SUBCOMMITTEE ON HUD-INDEPENDANT AGENCIES
April 29, 1988

Friends United Meeting recommends that the Congress declare null and void the Selective Service System regulation barring alternative service workers from performing their alternative service with employers that require religious commitment as a condition of employment.

Friends United Meeting appreciates the opportunity to offer this testimony. We intend to focus on Selective Service System regulation 1656.5(a)(1)(iii) which limits employers of alternative service workers (ASW's) to, "Those who do not require as a condition of the employment of an ASW...commitment to any political or religious belief or doctrine..." We fear that this could be interpreted to exclude our voluntary service program, Quaker Volunteer Witness, from service as an Alternative Service Worker employer. In addition, we would like to associate ourselves with the testimony of NISBCO, an organization in which we have long held membership.

Friends have suffered greatly on behalf of the principle of exemption from military service on grounds of conscience. The Military Selective Service Act, which properly accommodates this concern in no way authorizes the exclusion of alternative service jobs solely on the grounds that the civilian employer requires some kind of faith commitment. In our view it is extremely inconsistent on the one hand to require conscientious objectors to demonstrate that their convictions are the result of "religious training and belief" [MSSA 6(j)], and on the other hand to deny such religiously motivated individuals the possibility of performing their alternative service with agencies which share their motivation. This is particularly true considering the long history of cooperation between the Selective Service System and offices such as our own.

The material which accompanied the regulation when it was published in the Federal Register said, "this language reflects the long held Selective Service policy of planning not to approve an employer to employ alternative service workers in violation of the stated prohibition. This is untrue. This "long held policy" has only been held from the time of the original promulgation of the regulation in 1985 and its subsequent nullification by Congress. This new policy is in direct contradiction of our understanding of Congressional intent in this area. In a Conference Report accompanying the last major revision of the MSSA, the Congress stated, "...the Director of Selective Service may draw heavily on the experience and the recommendations of the local boards and State Directors in assigning conscientious objectors to alternative service and that local arrangements in which alternative service is now performed with religious and other organizations will not be needlessly disrupted." [Conf. Rep. No. 433, 92nd Cong., 1st Sess. 21(1971)]

In 1940, we were active in arranging for Civilian Public Service to be placed under the control of religious organizations, including the American Friends Service Committee. More recently, we have provided placement for alternative service workers with our voluntary service programs.

Quaker Volunteer Witness's predecessor, Volunteer Service Mission, grew out of FUM's draft counseling program in the early 1970's. The purpose of Volunteer Service Mission

> was chiefly to provide a channel through which conscientious objectors could find alternative service under the draft as required by the Selective Service Law. (Guidelines, 1974)

Because of the discontinuation of inductions in 1973, Friends United Meeting has had no need to provide opportunity for alternative service employment in its programs in recent years. FUM opposes conscription. However, if inductions were reinstated, we anticipate that our constituency would again call upon us to offer opportunities for alternative service through our voluntary service programs.

Quaker Volunteer Witness was established in 1979

> to provide opportunity for followers of Jesus Christ, at any age, to devote themselves for a period of time to work for the benefit of others, and in this way to provide the living acted-out message of Christ to a particular community. (Guidelines, 1980)

Over the course of the program's existence, volunteers have worked with many different organizations and programs (secular and church related) in various capacities as advocates for the elderly, the handicapped, the battered and abused. They have worked with inner city youth and with refugees. Volunteers have started a soup kitchen, a program for latch-key children, peace education projects and numerous other constructive activities.

Would this regulation directly impact us? That is not clear. All QVW applicants are required to fill out an application form which includes the question, "Please write a brief statement of your personal religious faith, including a statement of what Jesus Christ means to you..." The Handbook for our program also states:

> The volunteers are expected to be persons who are:
> ....committed to faith in the living Christ who empowers for service
> ....
> ....committed to worship centered on Christ as the living presence in the midst....

Thus, QVW volunteers are required to have a religious commitment, but that commitment is non-creedal. In fact, QVW volunteers have held, and will continue to hold, a wide variety of beliefs. Whether or not the regulation would be interpreted to exclude QVW from placing ASW's, it should be nullifiied because of the profound implications for church/state relations which it raises. The regulation curtails religious practice without a compelling state interest. By statute, 50 U.S.C. App. Sect. 456 (j), the only stipulation for alternative service work is that it must contribute to the maintenance of the national health, safety or interest. Secular work performed by volunteers through religious-based volunteer programs clearly meets that guideline. Congress has consistently recognized this fact, most recently in granting college loan deferments to volunteers in religious agencies, such as Quaker Volunteer Witness, as equivalent to ACTION/PEACE CORP. There may have been minor and incidental benefit to religious organizations as a result of ASWs' work, but the Constitution clearly mandates such accommodation of religious belief.

The exclusion of volunteer programs which require religious commitment from acting as ASW employers seems to rest upon a false understanding that such employers become "agents" of the Selective Service System and that the requirement of religious commitment therefore constitutes excessive entanglement by the government with religion. However, the contractual relationship between the Selective Service System and an ASW employer is clearly not that of "agency". SSS does not control the activity of the volunteer program, as it would if there was an agency relationship nor does SSS provide funds for the placements. On the contrary, religious volunteer programs have served to provide ASW placements precisely to preserve the independence of the C.O.'s from direct government control, while meeting the state's interest in the performance of work which furthers the national health, safety or interest. In fact, this regulation seems likely to to increase the practice of total noncooperation with the Selective Service System, as conscientious objectors within our membership see their independence from government control lessened.

In the rationale accompanying the regulation, it is asserted that "There is nothing in the decision of the United States Supreme Court in Corporation...v. Amos, 107 S. Ct. 2862 (1987) inconsistent with the foregoing." In fact, Justice Brennan's concurring opinion in that case is worth quoting.

> We are willing to countenance the imposition of such a condition of employment [i.e. religious belief] because we deem it vital that, if certain activities constitute part of a religious community's practice, the religious organization should be able to require that only members of its community perform these activities.

32 CFR Section 1656.12, 1656.13 provide opportunity for an ASW who objects to a particular assignment to be assigned to another employer. There is therefore no danger that an ASW would be required to participate in a religious based program to which he or she might object. The comment that this regulation is necessary to prevent churches from coercively attempting "to keep the boys in the fold" is both gratuitous and legally unfounded.

We hope that this particular regulation will be nullified. More generally, we hope that Congress will act to pursuade the Selective Service System that conscientious objection is a legitimate option for citizens and that they must cooperate with the religious community in administering the law.

STATEMENT OF WALTER F. SULLIVAN, BISHOP OF RICHMOND, VA., DIOCESE OF RICHMOND

I am Walter F. Sullivan, Bishop of the Catholic Diocese of Richmond. I am a member of the Consultative Council of the National Interreligious Service Board of Conscientious Objectors (NISBCO). I also serve on the National Advisory Council of Pax Christi-USA and chair the board of the Churches' Center for Theology and Public Policy.

I have submitted numerous written comments to the Selective Service about its proposed rules for conscientious objectors and alternative service work, reflecting support for the positions taken by NISBCO and expressing particularly Catholic concerns. These comments all seem to have been ignored. I would like to share with this committee particular concerns about Section 1656.5 (a) (1) (iii). It would prohibit employers of alternative service workers from requiring as a condition of such employment a commitment to any political or religious belief or doctrine.

Let me begin by stating briefly the Catholic Church's teaching about conscientious objection. The second Vatican Council expressed admiration for those who choose the path of conscientious objection, and called for legal protection of their rights. Five times in the last twenty years, Catholic bishops in the United States have affirmed the rights of conscientious objection and selective conscientious objection. The bishops have called for legal protection of these rights and approved of requiring conscientious objectors to perform alternative service to the community in place of military service.(1)

Prohibiting alternative service employers from requiring commitment to or respect for religious teaching runs counter to the Catholic understanding of religious liberty, both as it applies to individual believers and to churches and religious institutions.

For individuals, religious liberty protects not only one's interior, personal relationship with God and acts of public worship, but also the freedom to express one's religious convictions in public life and social relationships. As Pope John Paul II has emphasized, work is one such public activity that bears religious significance. Work is the means by which human beings transform nature, fulfill their dignity and potential, and share in God's creative activity.(2)

Religious beliefs about the God given dignity of all human beings, the loving care due to the "least ones" in society and respectful stewardship of the earth are consistent with the longstanding statutory requirement that alternative service work benefit the national health, safety or interest. Forbidding alternative service work that explicitly expresses Catholic CO's religious beliefs drives a wedge into the unity of faith and life that Catholic believers strive for.

For churches, religious liberty protects the churchs' freedom to live in civil society in accordance with the demands of faith.(3) The demands of faith include, for the Catholic Church, not only preaching the gospel of Jesus Christ, but also in the words of the second Vatican Council, permeating and improving the whole temporal order.(4) Religious liberty protects the church's right to establish educational, cultural, charitable and social organizations through which it demonstrates the special value of its teaching and acts on that teaching for the benefit of humankind.

United States law guarantees this religious liberty in a number of ways. A Supreme Court decision has recognized the right of religious institutions to expect employees to conform to the standards of the teaching that gives such institutions their special character. In recent legislation - namely, the Civil Rights Restoration Act - this Congress voted not to compel religious institutions to act contrary to their teachings about the specific matter of abortion, even while holding the same institutions accountable to a broad standard of civil rights law. Even religious institutions that accept federal funds, such as Catholic hospitals with federally funded building programs, do not forfeit any of these guarantees of religious liberty. Alternative service providers should be no exception.

Putting the alternative service regulations into effect is likely to eliminate most Catholic institutions as alternative service providers. A few examples will suggest why:

> There is a Catholic hospital in Richmond which has, in the past, expressed its willingness to accept alternative service workers. That hospital expects all its employees to abide by Catholic teaching on abortion and Catholic teaching on euthanasia as it applies to patients from handicapped newborns to young victims of spinal cord injuries to frail elderly. Will that hospital accept alternative service workers if it cannot ask them to make the same commitments?
>
> Suppose a Catholic school made a teacher's or a teacher's aide position available to alternative service workers. Could the school ask for conformity to Catholic teaching about marriage and human sexuality when the alternative service worker teaches the family life curriculum or the health curriculum? If not, would the school hire alternative service workers?
>
> A final example: Many dioceses resettle newly arrived refugees, provide employment and social services to them, and assist undocumented aliens in applying for legalization. Such operations provide opportunities for alternative service workers. But would Selective Service think that refugee resettlement requires a commitment to a particular political belief, perhaps if a church in the same diocese have declared itself to be a place of sanctuary?

The Selective Service's present alternative service regulations show a real failure to appreciate Catholic understandings of religious liberty and of the relationship between faith and the activities of life and work. The regulations also fail to respect US law and constitutional protections of religious liberty. Putting them into effect will likely curtail the alternative service placements available under Catholic auspices. Either because placements will not be offered because doing so would compromise an institution's hiring standards, or they will be ruled unacceptable on questionable grounds.

In the long run, our national interest is ill-served by the Selective Service's efforts to frustrate the service of a special group of highly principled young people. I hope that the HUD-Independent Agencies Subcommittee will use the powers of persuasion open to it as an appropriations committee to encourage the Selective Service to revise its alternative service regulations.

Footnotes

1. Human Life In Our Day, November 15, 1968, paragraphs 143-145.

   Declaration on Conscientious Objection and Selective Conscientious Objection, October 21, 1971.

   The Gospel of Peace and the Danger of War, February 15, 1978.

   Statement on Registration and Conscription for Military Service, February 14, 1980.

   The Challenge of Peace, May 3, 1983, paragraphs 111-121 and 231-234.

   All of these statements are reprinted in Nolan, ed. Pastoral Letters of the United States Catholic Bishops, NCCB/USCC Office of Publishing Services, Volumes III and IV.

2. On Human Work, encyclical letter of John Paul II, September 1981, paragraph 9.

3. Declaration on Religious Liberty, Second Vatican Council, December 1965, paragraph 13.

4. Decree on The Apostolate of Lay People, Second Vatican Council, November 1965, paragraph 5.

STATEMENT OF PAX CHRISTI CENTER ON CONSCIENCE AND WAR

I welcome the opportunity to submit this written testimony on behalf of myself and the Pax Christi Center on Conscience and War. By way of introduction, let me say that I am Professor Emeritus of Sociology at the Univesity of Massachusetts-- Boston, now serving as National Director of the Center, the counseling and resource affiliate of the American section of the international Catholic peace movement. For the record, I also serve as a member of the National Council of Pax Christi USA and the Board of Directors of NISBCO.

Our immediate concerns relate to current advance planning for the prospective alternative service program to which conscientious objectors would be assigned in the event of a return to active conscription under the Selective Service System. Beyond that we feel consideration should be given to broader issues concerning the administration of alternative service and provisions of the Military Selective Service Act and its interpretation. I believe I can claim a certain measure of expertise bearing upon these issues both on the basis of my professional sociological research on the Civilian Public Service program of World War II and my personal experience as a veteran of that program.

The Center has participated in developing and supports the recommendations presented by NISBCO. In particular we endorse the position that religious institutions or agencies which undertake to act as alternative service employers will be doing so solely to provide meaningful service opportunities to conscientious objectors. It would be a serious distortion of that intent to regard their participation as constituting an "agency" relationship under the conscription authority as the Selective Service's interpretation would imply. Though we consider it unlikely that Roman Catholic agencies participating in any such program would require an "affirmation of faith" from applicants for alternative service under their auspices, but fully support the right of religious communities to provide their members with service opportunities in a spiritually supportive environment and atmosphere.

We recommend, too, that action be taken to require Selective Service to amend its procedures to permit registrants to state their conscientious objections at the time of registration. In terms of procedural efficiency alone, it would be to Selective Service's benefit and that of prospective employers to have such advance indication of the proportion of registrants likely to seek assignment to such alternative service; more important, though, it would be a mark of recognition and respect for a perfectly legal option.

As already noted this Center has more basic concerns relating to alternative service. Briefly stated, we believe that, once a registrant is classified as a conscientious objector and inducted into alternative service, the Selective Service System should have no further jurisdiction over him or any administrative authority over the alternative service to which he may be assigned. When a registrant is inducted into the military forces, Selective Service has no further responsibility for, or control over, his future assignments or transfers, the quality of his performance of assigned duties, his general conduct, or any other aspect of his behavior during the prescribed period of service. The same should apply, we submit, to the induction of classified conscientious objectors into alternative service.

We recommend, therefore, that alternative service inductees be "turned over" to whatever government agency or department is responsible for the type of services he is to perform. Theirs would be the responsibility to select alternative service employers and to set standards and conditions of employment, record-keeping and reporting obligations, and the like. Or, should the Congress so decide, a separate office or agency specifically devoted to the alternative service program and its administration could be established. Both solutions have proven successful in nations where conscription is now in force. Either would be preferable to any arrangement under which direction of the program is left to Selective Service.

This proposal is motivated by more than a desire for symmetry of procedures, though such symmetry would seem to be required if true equality under the law is to be achieved. We are more concerned with attitudinal differences and the obstacle they present -- and have presented in the past --to the understanding and respect to which the individual who has demonstrated eligibility for the legally recognized alternative service option should be entitled if fairness and equity under the law are to be assured.

Though the Selective Service System is a civilian agency independent of, and separate from, the Department of Defense, we cannot ignore the fact that its major task is to provide the armed forces with a supply of qualified recruits as needed Registrants who claim classification as conscientious objectors constitute, in bureaucratic terms, a "negative productivity factor" and a potential threat to the efficient performance of that assigned task. For this reason alone, conscientious objectors -- and this is certainly true in the event a substantial number of registrants claim that status -- are likely to be regarded by Selective Service as a "problem", both individually and as a category.

Which, of course, they will be. There is a built-in adversarial relationship between pacifists and the conscription authority which, however much it may be lessened or controlled through personal contact or formal regulations, cannot be eliminated altogether. Indeed, in time of war or other emergency mobilization situation under which Selective Service is presented with quotas to meet, those personal contacts may intensify rather than reduce the tensions. A General Hershey may believe, as he once testified before Congress, that the conscientious objector is "best handled" if no one hears of him. However, to those who have taken the trouble to have their pacifist witness recognized and "put on the record", such an implied quarantine of that witness (and themselves!) is insulting and offensive.

Under these circumstance, then, no matter how sincere Selective Service officials may be in their stated intention to be fair and equitable in their dealings with conscientious objectors, fairness and equity are not enough. What is required is a quality of understanding and respect which, given the sociological reality of those attitudinal differences, is difficult, perhaps impossible, to achieve.

The most crucial and almost insurmountable obstacle lies in the process of role definition and reinforcement. The Selective Service System, today as in the past, is staffed to a large degree by former military personnel and reservists. The careers of these officials reflect a commitment to military ideals often reinforced by active service experience. Conscientious objection, as they (correctly) see it, represents a rejection of their dearly held values and a repudiation of their chosen way of life. The mystique of the uniform, not to mention the duties and sacrifices associated with it, are seen to be diminished if not demeaned by the refusal to wear it. This refusal, in turn, is often equated with the avoidance or denial of a "sacred" civil obligation, a betrayal of the virtues of loyalty and patriotism. In time of war or imminent threat of war this refusal may be interpreted as self-indulgence, cowardice, even sedition and treason.

We are not proposing that the alternative service program be directed and administered by pacifists or their supporters. All we ask is that authority over that program and the individuals assigned to it not be placed in the hands of officials whose own career choices demonstrate a contrary commitment and whose primary responsibility is to fill the ranks of the armed forces.

In our judgment the manner in which Selective Service's proposed procedures and regulations relating to conscientious objection and alternative service have been developed and presented reveals an almost total absence of that understanding and respect to which those who will take that stand are entitled. Instead of honoring the nation's commitment and providing opportunity to make meaningful social contributions of a non-military character, priority has been given to making certain that the conscientious objector option not be allowed to become too attractive or easily available. The efforts of NISBCO and others of the peace community to protect the rights of those who will take that stand are received with suspicion and, in most instances, disregarded or rejected.

It is at this point, perhaps, that my experience in Civilian Public Service becomes more instructive than sociology. My semi-autobiographical study of the Warner NH camp sponsored by the Association of Catholic Conscientious Objectors charged CPS with being "punitive in practice and intent, an experiment in the democratic suppression of a dissident religious minority in time of war." I still subscribe to this admittedly harsh evaluation and attribute the greater part of that failure to the fact that final authority for the program and over the men assigned to it lay with Selective Service. As far as I and the majority of my fellow campers were concerned, it did *not* provide the "work of national importance" promised; instead considerations of discipline and the isolation General Hershey considered so important were given precedence. The work was *not* performed "under civilian direction" despite the legal fiction that wartime Selective Service was operated as a civilian agency. The men who made the decisions and passed on the orders were in almost every instance military officers and not at all disposed to working things out through discussion and negotiation.

Item: when men in the program organized a representative conference at which common concerns were to be discussed and solutions proposed, it was aborted by an order suspending all furlough and leave privileges for the week it was scheduled to be held. *Item*: in an official visit to a Chicago hospital unit, a Selective Service official (a Major, if my memory serves) declared that Selective Service, not the Constitution, was the "law of the land" at least for the duration. *Item*: men who failed to meet minimum physical or psychological standards for military service were regularly assigned to CPS.

In 1945 Col. Kosch, second in command to General Hershey, testified to the House Committee on Military Affairs, "We got a great many men who were disabled. We had to meet the train with an ambulance and haul them to the hospital to keep them from dying before we could get them back home." That may have been exaggeration or, possibly, a touch of black humor on his part, but Selective Service records suggest such things might well have happened. One of my fellow Warner campers was recommended for medical discharge after being diagnosed as "definitely schizophrenic" and "close to the breaking point" by a medical examiner for a state mental hygiene society. The recommendation was rejected by Selective Service's medical division *without conducting any examination of its own*. (The application was renewed and *granted a year later!*) Another man with the diagnosis of "psychoneurosis severe which is of permanent nature" and who, a month later, was reported to have lost full control of his bodily functions, was given a medical discharge -- *but not until two months more had passed!* Selective Service's own monograph reports the drowning, ruled a suicide by the coroner, of a man whose medical discharge had been recommended by camp authorities for reasons of "psychoneurosis severe, with anxiety and hysteria."

I do not attribute these things to malice on the part of General Hershey or his subordinates, nor am I suggesting present Selective Service officials would use their authority in equally insensitive fashion. The fault lay in a *system* which made such frivolous abuse of authority possible. My colleagues and I are convinced that any system which places a "dissident religious minority" under the total control of persons unsympathetic to the principles upon which that dissidence rests is almost certain to repeat the shortcomings of the Civilian Public Service program. I submit, too, that those same attitudes of suspicion and disapproval which led to that shameful record are reflected today in the intransigence of Selective Service officials with respect to criticisms and proposals advanced by NISBCO and others to correct real or potential sources of offence or inequities in the regulations and procedures those officials have submitted.

If justice and equity, understanding, and, above all, *respect* are to be given due recognition, Congress must take action to make sure of it now. Should an emergency mobilization or simple demographics lead to a return to the draft, the public mood (and, it is reasonable to assume, that of members of Congress as well) will be opposed to making any changes in the law or its interpretation which might be interpreted as favoring, or "coddling", conscientious objectors. I'm sure there is no need to explain the sociological dynamics upon which that admittedly pessimistic conclusion is based. One need only review the history of the past to find ample evidence of its validity.

That is why, though it may be beyond the purposes of this hearing, we propose that Congress consider a complete re-assessment and, perhaps, overhaul of Selective Service itself. If we have concerned ourselves with the more limited issues of the proposed regulations and procedures and recommendations for revising and correcting them, this is because of the immediacy of the specific issues under consideration. However we would not be living up to our responsibilities as a Catholic organization if we did not take this opportunity to protest the *de facto* religious discrimination written into the basic Selective Service legislation and urge that action be taken to eliminate it.

Beginning with their November 1968 pastoral letter, "Human Life in Our Day", the Roman Catholic bishops have issued repeated calls for revision of the law to include recognition of *selective* conscientious objection, and this recommendation was reiterated most recently in their 1983 pastoral letter, "The Challenge of Peace: God's Promise and Our Response". In its "Statement on Registration and Conscription for Military Service" (February 14, 1980) the Administrative Board of the U. S. Catholic Conference voiced its support of "the right of conscientious objection as a valid moral position, derived from the Gospel and Catholic teaching" and continued, "Secondly, we support the right of selective conscientious objection (SCO) as a moral conclusion which can be validly derived from the classical moral teaching of Just War theory. *The position of SCO has not yet found expression in our legal system, but a means should be found to give this legitimate moral position a secure legal status.*" (emphasis added)

The law as written restricts conscientious objector status to individuals who reject participation in war in any form, thereby recognizing (as indeed it should) adherents to religious communities which incorporate a doctrinal pacifism in their religious teachings. It does not, however, grant the same recognition to members of the Roman Catholic Church or other major religions (Episcopal, Lutheran, Methodist, etc.) whose teachings on war and peace distinguish between "just" and "unjust" wars. In "just" wars which meet certain specified conditions, the believer is permitted to participate; if, on the other hand, the believer is convinced in good conscience that one or more of these conditions are not met and the war is "unjust", it would be grievously sinful for him to participate. Though we assume such was not the intent of the framers of the legislation, to recognize the one and not the other constitutes preferential treatment of one body of religious teachings over another. We agree with our bishops that this is a structured injustice demanding remedial action by the Congress.

In summary: (1) we endorse and support the proposals submitted by NISBCO on behalf of the 40 or more religious groups represented by its Consultative Council and share their concern over past failures of Selective Service to give due consideration to suggestions and comments submitted to them or, for that matter, to past actions taken by Congress in this respect; (2) we propose further that action be taken now to remove whatever alternative service program may be established from Selective Service jurisdiction and administration in order to assure that conscientious objectors inducted into such program will receive the understanding and respect to which they are entitled and not subjected, as has been the case in the past, to policies and regulations that are punitive in character or otherwise lacking in fairness and equity; (3) finally, we urge the Subcommittee and its individual members to initiate whatever steps are needed to amend the Military Selective Service Act to permit recognition of selective conscientious objection as recommended by the Catholic bishops of the United States and other religious leaders and thereby eliminate the *de facto* religious discrimination that now exists.

STATEMENT OF THE REV. CHARLES BOYER, CHURCH OF THE BRETHREN

Chairman Proxmire and members of this subcommittee, I thank you for this opportunity to share concerns regarding Selective Service System regulations.

The Church of the Brethren has been identified as a Historic Peace Church because of its convictions against participation in military conflict and training. Members of our religious body first arrived in the territory of Pennsylvania in 1719. We have been consistent in our opposition to war and have worked closely with legislators and other religiously concerned persons to develop a pattern of alternative service which would be acceptable to both the federal government and conscientious objectors to war.

My purpose in submitting this testimony is to express concern that the Selective Service System regulations issued July 1, 1987 and December 17, 1987 do not respect long-standing agreements between the Selective Service System and religious agencies and are punitive to persons seeking to be recognized as conscientious objectors to war willing to perform alternate service. I will attempt to speak specifically and concisely. My concerns focus on three areas.

I. Denial of the Rights of Religious Bodies to Employ Persons Performing Alternate Service

It is ironic that conscientious objectors to war are required to demonstrate religious beliefs or strongly held moral beliefs to justify their claim, but then these same conscientious objectors are not allowed to be employed by a religious agency to perform alternate service. If the only form of alternate service available was provided by religious bodies, the Selective Service System might need to protect the consciences of certain alternate service workers not wishing to be employed in a religious program. However, the programs sponsored by religious agencies are only one of many options available to alternate service workers. Hospitals, retirement homes, orphanages, mental health facilities, Goodwill Industries and many other agencies provide opportunities for persons wishing to work for secular employers.

Religious agencies desiring to employ alternate service workers are completely above board in describing what it means to work for that agency. The Church of the Brethren has employed primarily Christian conscientious objectors, but has never made membership in a Christian body mandatory for employment with us. All persons committed to living out nonviolence in day-to-day work, willing to serve for minimal remuneration, and prepared to share their convictions about peace are welcome to apply to us. Other Christians or religious employers may have slightly different criteria for accepting alternate service workers, but those criteria are clear. No one has been forced to accept employment with a religious agency whose practices were repugnant to the individual applicant.

It does not appear that religious agencies have a record of abusing employees in the past. In fact, during the Vietnam Era, most religious agencies had difficulty assigning all the alternate service workers applying to them. We read the current actions of Selective Service to be discriminatory against religious employers.

II. Conscientious Objectors are Discriminated Against in Making a Personal Appearance Before a Draft Board

The Selective Service System is requiring all conscientious objectors to appear before their local board for a hearing. It appears that some conscientious objector claims would be firm and clear enough that no hearing would be necessary. The date and time of the hearing are set by the local board. If the conscientious objector is out of the country or cannot make the scheduled hearing, the local board is not obligated to reschedule the hearing.

It appears that Selective Service has an excellent mechanism to deny conscientious objector claims--scheduling the local board hearing when the claimant cannot attend and deny any other opportunity to appear before the board. One cannot be recognized as a conscientious objector without the hearing which is being denied.

III. No Appeal Can Be Made From a Unanimous Decision of a Local Board

Over the years I have known local draft boards which vowed that, "No conscientious objector will ever be recognized by this board." It would be tragic if a person dealing with such a board had no further recourse for an appeal. Local boards have made errors in the past. Some review mechanism is necessary or some sincere, qualified conscientious objectors will end up in prison rather than performing alternate service.

In closing let me urge that your subcommittee does everything in its power to guarantee that the Selective Service System treats conscientious objectors justly. The proposed regulations are prejudiced against religious objectors. We ask that Selective Service officials be required to obey the laws of the land and not deny alternative service workers the opportunity to work within a religiously-sponsored program.

ENVIRONMENTAL PROTECTION AGENCY

STATEMENT OF MARIE WINSLOW, LEGISLATIVE LIAISON, NATIONAL FEDERATION OF FEDERAL EMPLOYEES

ACCOMPANIED BY WILLIAM HIRZY, PRESIDENT-ELECT, NATIONAL FEDERATION OF FEDERAL EMPLOYEES

Senator PROXMIRE. Our final witnesses are EPA witnesses. We have Ms. Marie Winslow and Mr. William Hirzy, National Federation of Federal Employees; Dr. Leonard Weinstein, Cornell University; and Dr. William Engel, National Environmental Training Association.

We are delighted to have you folks.

Ms. Winslow, go right ahead.

Ms. WINSLOW. Thank you, Mr. Chairman. On behalf of the National Federation of Federal Employees, which represents a substantial number of employees——

Senator PROXMIRE. Excuse me. You and Mr. Hirzy are together; is that right?

Ms. WINSLOW. Yes, sir; we have one statement. I will be speaking, and Mr. Hirzy will answer questions. The National Federation of Federal Employees represents a substantial number of employees under this subcommittee's jurisdiction, and today, Mr. Hirzy and I would like to speak about funding for the Environmental Protection Agency.

SEEK BETTER USE OF FUNDS

NFFE Local 2050 represents all of the scientists, engineers, lawyers, and professional employees at EPA's Washington headquarters. Our request is perhaps a bit more unusual than some of the others you have heard today. We are not requesting more funds for EPA, but rather that the funds be better spent to fulfill the agency's mission.

NFFE is concerned that EPA should have the professional talents to use its proposed budget to develop sound, science-based guidance and regulations needed to mitigate the known and emerging problems toxic to man and other life.

EPA has evolved from an organization where the agency mission was once pursued through the knowledge of professionals proficient in scientific and technical disciplines into a management and support oriented organization. As a result, EPA currently has a serious deficit in professional staff.

It may surprise you to know that EPA has absolutely no senior people in setting major disciplines, and only between 1 and 10 employees in another 9 disciplines; and each of these cannot be considered to be adequately staffed without a minimum of between 15 and 25 employees. Those minimum staffing levels represent the critical mass necessary to ensure fulfillment of the Agency's mission, which brings us to our second point.

NFFE is also concerned that EPA can provide the organizational setting needed to make effective use of scientific and technical knowledge and develop the credibility to engender a visionary leadership that will enlist producers and consumers in a national effort to eliminate our environmental problems through long-term planning and regulations.

The current EPA organization, however, is based on the leadership of 11 separate Assistant Administrators, each of whom has access to professional employees. As a result, professional employees are in 108 different divisions.

Professionals have been placed in divisions without any individuals in the same discipline; this leads to isolation, poor morale, poor potential for learning and teaching, which in turn increases the potential for poor quality workmanship.

We want you to know that while it is possible that an internal organization of EPA may provide greater proficiency in using professional talents, this can only be accomplished by centralizing professionals into that critical mass that would serve all agency programs.

Assistant administrators with responsibilities for individual laws could then work together on integrated multimedia regulatory efforts for each toxic chemical. Such an organization with concentrations on a single-risk assessment would eliminate the current duplication of effort and free up professionals for additional work.

Our final concern is that EPA examine what is needed to maintain fundamental existing programs and redevelop an ability to delineate emerging programs. Toward that end, we would like to suggest that a special initiative should be funded to focus on unsuspected chemicals appearing in humans, in the food chain, in air, in water, and in soils.

Without such an effort, EPA will always be reacting to problems when they have reached nearly unmanageable proportions.

We would like to see 1989 become the year when EPA is rededicated to its scientific and technical mission and when the Agency reexamines the strategies for environmental protection. We would like to see a strategy by which we do not throw money at problems; we instead employ the scientific and technical expertise of the best professionals.

Thank you, Mr. Chairman.

Senator PROXMIRE. Thank you very much, Ms. Winslow.

[The statement follows:]

STATEMENT OF MARIE WINSLOW, LEGISLATIVE LIAISON, NATIONAL FEDERATION OF FEDERAL EMPLOYEES

On behalf of the National Federation of Federal Employees, which represents a substantial number of employees in many agencies falling under this Subcommittee's jurisdiction, I appreciate the opportunity to present our concerns about the funding and resource allocation of one agency in particular, the Environmental Protection Agency.

NFFE Local 2050 represents all of the scientists, engineers, lawyers and professional employees at EPA's Washington Headquarters. In contrast to our testimony of previous years, we do not appear here today requesting substantial increases in funding for EPA. Our request is rather that the funds allocated to EPA be better spent to fulfill our mission.

NFFE is concerned that EPA should have the professional talents to use its proposed budget to develop sound, science-based guidance and regulations needed to mitigate the known and emerging environmental problems toxic to man and other life. However, over the past eight years, the EPA Headquarters staff has changed from the scientific community it once was. EPA has evolved from an organization where the agency mission was pursued through the knowledge of professionals proficient in scientific and technical diciplines into a management and support oriented organization. NFFE finds it disheartening that only 20% of the workforce are qualified professionals. One employee in 25 is an engineer, one employee in 25 is a lawyer and one employee in 20 is trained in a biological or health discipline. One employee in 17 is trained in the physical sciences. NFFE does not believe that EPA can develop the staff and "peoplepower" necessary to achieve its mission when only 20% of the employees have the training and knowledge to bring scientific credibility to the agency's efforts.

Long-term stability and learning require that EPA have a workforce that includes apprentices, mid-level and senior-level professionals within each discipline. Senior members, representing a mastery of knowledge within their discipline, are the key to sound decisions. Apprentices are the future of the agency.

EPA currently has a serious deficit in professional staff. Despite the fact that EPA's mission is to consider the impact of toxicants on the environment, it has no senior people in: plant physiology and pathology, wildlife biology and zoology, fishery biology, soil science and geology, genetic/mutagenesis, or immunology oceanography. In addition, the agency has only between one and ten employees in the following discplines: hydrology, oceanography, civil engineering, industrial hygiene, fishery biology, ecology, soils, genetics, and plant sciences. Each of these disciplines and those mentioned formerly cannot be considered to be adequately staffed without a minimum of 15 to 25 employees. These minimum staffing levels represent the "critical mass" necessary to ensure fulfillment of the agency's mission. EPA must assemble these talents before it can effectively protect the environment and protect humans against effects on the immune system or genetic mutations.

This brings us to our second point. NFFE is also concerned that EPA can provide the organizational setting needed to make effective use of scientific and technical knowledge and develop the credibility to engender a visionary leadership that will enlist producers and consumers in a national effort to eliminate our enviornmental problems through long-term planning and regulations. The current EPA organization is based upon the leadership of 11 separate assistant administrators each of whom have access to professional employees. The professionals are employed in 108 different divisions. Professionals have been placed in divisions without any individuals in the same discipline, leading to isolation, poor morale, poor potential for learning and teaching, which in turn, increases the potential for poor quality workmanship.

As an example, each of the divisions in the Office of Solid Waste and Emergency Response, the Office of Air and Radiation, the Office of Pesticides and Toxic Substances, the Office of Research and Development and most of the divisions in the Office of Program Planning and Evaluation and the Office of Water rely upon a single professional employee to provide insight into one or more of the technical or scientific areas for which they have responsibility.

Scientific and technical talent available to selected offices is so sparse that almost none of their divisions have the leadership of senior professional staff. This is especially critical in the Office of Solid Waste and Emergency Response (OSWER) and the Office of Air and Radiation. These are two of the offices selected for new initiatives in 1989. Sadly in EPA, only the Office of General Counsel has been able to retain a high level of senior professionals, and these are solely in the legal area. This reflects a shift in the agency's philosophy away from mission orientation to regulation writing.

Several Basic EPA programs have been affected by across-the-board economy measures and are struggling to cope with increasing workloads. As an example, the Office of Pesticides and Toxic Substances is struggling with Toxicology Reviews in Support of Pesticide Registration, Premanufacturing Notifications, and Basic Toxicology Evaluations in Support of the Agency for Toxic Substances Disease Registry. Each of these programs needs an infusion of 20% more professional personnel. This translates into 20 full-time equivalent employees.

While it is possible that an internal reorganization of EPA may provide greater efficiency in using professional talents, this can only be accomplished by centralizing professionals into the "critical mass" mentioned earlier for risk assessment that would serve all agency programs. Assistant administrators with responsibilities for individual laws could then work together on integrated multi-media regulatory efforts for each toxic chemical.

Such an organization with concentrations on a single risk assessment would eliminate the current duplication of effort and free up professionals for additional work. Limited efforts by the agency in this direction should be expanded on an agency-wide basis to improve efficiency.

Our final concern is that the EPA examine what is needed to maintain fundamental existing programs and redevelop an ability to delineate emerging problems. Towards that end, NFFE would like to suggest that a special intiative should be funded to focus on unsuspected chemicals appearing in humans, in the food chain, air, water and soils. Without such an effort, EPA will always be reacting to problems when they have reached nearly unmanageable proportions. With such an effort EPA would be able to get a sense of emerging problems and begin to solve them before disaster occurs.

NFFE would like to see 1989 become the year when EPA is rededicated to its scientific and technical mission and when the agency reexamines the strategies for environmental protection. We would like to see a strategy by which we do not throw money at problems, we instead employ the scientific and technical expertise of the best professionals.

That concludes my statement. I would be happy to answer

STATEMENT OF DR. LEONARD H. WEINSTEIN, PROGRAM DIRECTOR, ENVIRONMENTAL BIOLOGY; WILLIAM BOYCE THOMPSON DISTINGUISHED SCIENTIST, BOYCE THOMPSON INSTITUTE AT CORNELL UNIVERSITY, ON BEHALF OF THE NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

Senator PROXMIRE. Dr. Weinstein?

Dr. WEINSTEIN. Thank you. My name is Leonard Weinstein. I am program director for environmental biology at Boyce Thompson Institute at Cornell University, and I am representing the National Association of State Universities and Land-Grant Colleges, an organization of somewhere over 100 major universities and colleges.

EXPLORATORY RESEARCH PROGRAM

The purpose of my discussion is to concentrate on one subject, which is the exploratory research program, sometimes called competitive grants and sometimes called the investigator initiated research. It is also sometimes called basic research.

The national association feels that this program is essential to EPA's mandate in fulfilling its regulatory control and in maintaining the alliance that has been in action for the past many years, since EPA has been in existence.

The exploratory research program, however, has really suffered over the years, and the last page of my testimony has a diagram which shows what has happened to it since about 1980. The program peaked in 1981 at about $22 million, which in today's dollars is about $29 million.

Today, it is at $8 million, and it is proposed to be at $8 million for next year, which is 27 percent of the amount in 1981, which is not a very happy situation.

The other problem is that there is no funding at $8 million to continue research grants that are presently in existence. There are five major disciplines in this program, from biology through physics and chemistry and health, and so on and so forth.

Since there is funding for second and third years, there is very little that is available. Our proposal is in the diagram; it is a serious proposal.

I guess in concluding I would just like to read a statement that was made by Dr. Bernard Goldstein, who is the former Assistant Administrator for Research and Development of EPA, at a recent meeting in Chicago:

> Perhaps the best way to summarize the impact of the grants and centers programs is that it might have been better if they hadn't started it at all. The expectations raised in academic circles has been replaced by antagonism. Writing grants is a task. Being repetitively told of high approval but of no funding in essence destroys the incentive to submit for the grants.
>
> I must admit that, despite having major funding needs to support our growth, I have told my department faculty—he is a professor of medicine at Rutgers—not to waste the time and effort needed to submit a grant to EPA. The likelihood of payoff is too small.
>
> This is not an argument against having a Grants and Centers Program. EPA desperately needs a program of this nature. However, it should be recognized by all that there is a threshold of funding which, if not achieved, will not only make the program ineffective, but will lead to negative interactions of harm to EPA's mission.
>
> I suggest that total funding of the Grants and Centers Program, not counting requests for applications, be in the range of 15 percent of EPA's research and development budget.

That is the end of the quotation from Dr. Goldstein. A person of his stature and of his experience, to make this statement, I think, is very interesting; and the national association supports his request and also the request at the end of the document. Thank you very much, Mr. Chairman.

Senator PROXMIRE. Thank you, Dr. Weinstein.

[The statement follows:]

STATEMENT OF DR. LEONARD H. WEINSTEIN, PROGRAM DIRECTOR, ENVIRONMENTAL BIOLOGY; WILLIAM BOYCE THOMPSON DISTINGUISHED SCIENTIST, BOYCE THOMPSON INSTITUTE AT CORNELL UNIVERSITY, ON BEHALF OF THE NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

I am Leonard H. Weinstein, Program Director for Environmental Biology, William Boyce Thompson Distinguished Scientist, Boyce Thompson Institute at Cornell University, and Adjunct Professor of Natural Resources, Cornell University. I am also a member of the EPA Science Advisory Board, Committee on Environmental Effects, Fate and Transport.

I have been involved in research on the effects of atmospheric pollutants for nearly 30 years. I presently direct a group of scientists who are conducting research on the effects on agriculture and forestry of ozone, acid rain, sulfur compounds, nitrogen compounds, fluorides, airborne particles, and heavy metals.

I am here today to testify on behalf of the Environment Committee of the National Association of State Universities and Land-Grant Colleges (NASULGC).

The purpose of this testimony is to comment on the availability of adequate support for long-range basic research on environmental problems within EPA and at universities and agencies outside of EPA.

I plan to devote the short time allotted for my presentation today to two subjects relating to the EPA budget: (1) support for the Exploratory Research Program (investigator-initiated competitive grants), and (2) the Environmental Research Centers Program. In the opinion of NASULGC, these are both absolutely essential ingredients for the most effective operation of EPA, in fulfilling its mandate for regulatory control and abatement of pollution, and for the alliance of EPA with the college/university research community to aid EPA in reaching its goals most efficiently and cost effectively.

From the standpoint of the college/university the salient qualities of both programs are their long-term potentials and the greatest probability of innovative research. The typical research grant awarded through this program averages 2.4 years, and can be resubmitted for the peer review process for further continuation. The likelihood of success for this extended funding, however, is practically nil because of the extremely limited availability of funds. Worthy research that deserves long-term funding goes unsupported. One has only to examine the total support for the program and the average award of $100,000 per grant-year, to recognize that at the present and proposed level of funding of $8 million the program can sustain a total of only 80 grants at any one time. These must be distributed among the five sections, each representing different disciplines within the grants program. Because essentially all of the grants require second-, and many third-year funding, very few new grants (perhaps 25) can be awarded. The number of new awards for the different disciplines each year is minimal. It is logical to ask if this program is worthy of support. The answer is an unqualified "yes" for the following reasons. Firstly, the program fulfills a function distinct from that of other agencies because most of its resources are devoted to research relevant to EPA's mission. Secondly, grants are awarded after a peer-review process that ensures that funded projects are of high scientific quality. The review panels, composed of many of our best environmental scientists, approve only 33% of the proposals they review, an approval rate much lower than some other federal grant programs.

When one looks at the Federal budget for environmental research, EPA grant funds as a whole provide an unmet need. Therefore, funding of the competitive research grants program at its current level is a form of scientific divestment occurring at a time when our needs are greater than ever for unique and creative approaches to understand and solve problems that affect the quality of life for every citizen. The funding for this program should not be evaluated as part of the total EPA research effort, because much mission-oriented research is also funded through the Request for Application (RFA) process. RFAs support research of immediate need to EPA, and the creative and innovative aspects are obviously less. That is not to say that the RFA approach is not extremely valuable. But the problems that must be solved by EPA need a strong base of research to open new avenues that help understand the problems that are not part of the "bandwagon" and that maintain a stream of new information to draw upon for present and future problems.

If the public, the research community, and Congress are truly concerned with the declining state of our environment, we offer some past history and a new proposal for funding of the grants program (see attached figure). The peak of funding for competitive grants was in 1981, with about $22 million appropriated (ca. $29 million in constant dollars). In subsequent years funds began dropping: ca. $13 million in 1982 ($17 million in constant dollars), $9.5 million in 1983, $9.0 million in 1984, $12 million in 1985, $10.6 million in 1986, $10.1 million in 1987, and a low of about $8 million in 1988. Clearly, there has been a drastic reduction in funding that inversely parallels the degree of environmental problems. We propose that the grants program should be strongly enforced with the following three-year plan: 1989, $16 million; 1990, $30 million; 1991, $35 million. This amount of funds is about the same as that requested by NASULGC to this Committee in 1984 for fiscal 1985 ($35 million minimum funding for Grants and Centers, with a more suitable amount at $50 million).

Let us close with two quotations. The first is from a recent speech by Dr. Bernard Goldstein, former EPA Assistant Administrator for Research and Development, and presently of the Robert Wood Johnson Medical School, Rutgers University:

"Perhaps the best way to summarize the impact of the grants and centers program is that it might have been better if they hadn't started it at all. The expectations raised in academic circles have been replaced by antagonism. Writing grants is a task. Being repetitively told of high approval but no funding in essence destroys the incentive to submit further grants. I must admit ... that despite having major funding needs to support our growth, I have told my department faculty not to waste the time and effort needed to submit a grant to EPA; the likelihood of payoff is too small.

"This is not an argument against having a Grants and Centers program. EPA desperately needs a program of this nature. However, it should be recognized by all that there is a threshold of funding which, if not achieved, will not only make the program ineffective but will lead to negative interactions of harm to EPA's mission. I suggest that total funding of the Grants and Centers program, not counting RFAs, be in the range of 15% of EPA's R & D budget." We find it disheartening that a highly respected scientist and administrator so closely associated with EPA for several years, should have such negative feelings about the funding level of the program. Dr. Goldstein's proposal translates to a total of ca. $30 million for the Grants and Centers program in the 1989 budget, and it is compatible with the NASULGC proposal given above of ca. $17 million available for 1989 support and $30 million in the 1990 budget.

The second quotation is from Dr. Peter Richerson, Director, Institute of Ecology, University of California at Davis, CA.:

"The low absolute amounts of research expenditures (and their fluctuations in time) by EPA mean that no university researcher can build a career substantially on the basis of EPA support. ... Faced with a choice of cultivating contacts with EPA, cultivating contacts with another mission agency, or investing my own personal time directly in research, the EPA option will hardly be given a second thought. ... EPA's research expenditures are far too low to have a significant impact in the universities, and the ratio of basic to applied expenditures is far too low for EPA to have any impact on the agendas of disciplines."

Environmental Research Centers

In 1979, EPA created the Centers ("Centers of Excellence") program to provide (1) research and training that emphasize long-term environmental problems, (2) forecasting of future problems by focusing and evaluating a large body of basic scientific knowledge, and (3) guidelines regarding the kinds of research needed to evaluate the extent of existing and emerging problems. There are eight Centers, each devoted to different areas of research and awarded competitively. Support for each Center is provided through a cooperative agreement with EPA. Each Center's research program is managed by a Center Director in concert with EPA's Project Officer. The Director is assisted by a Science Advisory Committee, composed of distinguished scientists from other institutions or agencies, and a minimum of two EPA scientists. Some Centers have an internal advisory committee composed of scientists from the home institution. So, clearly, each of the Centers is operating scientifically in a manner compatible with EPA's stated goals.

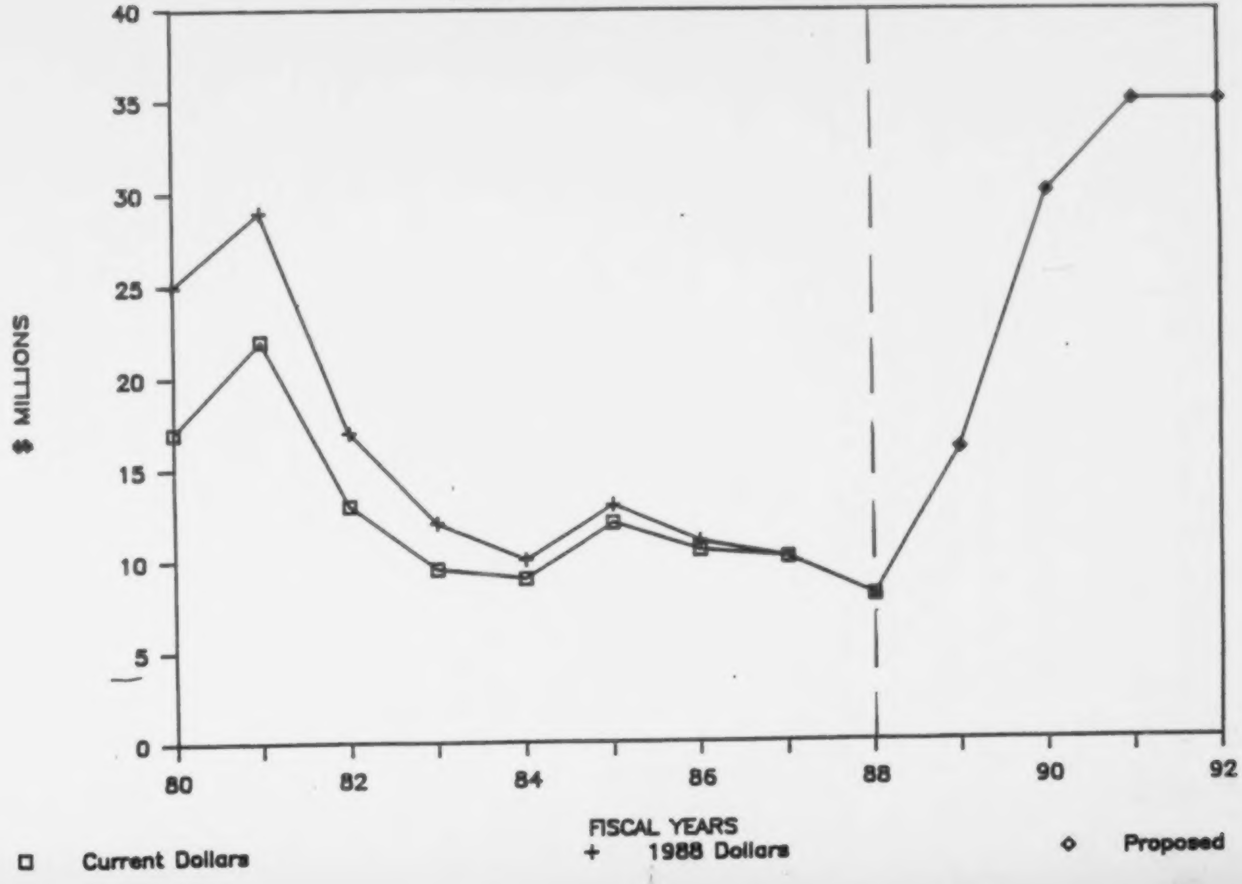
Each Center is responsible for publishing its own work, preferably in peer-reviewed journals. In fiscal year 1987 (1 October 1986 - 30 September 1987), the Centers produced 91 peer-reviewed journal articles, 24 books or bound proceedings, 47 book chapters, and 126 project reports. In addition, 15 conferences, workshops, or seminars were sponsored or co-sponsored. EPA is presently seeking proposals for five additional university-based Centers for Hazardous Substance Research to be distributed geographically. As in the case for previous Centers, EPA's intention is to fund each Center at $1 million annually. Although $1 million was originally proposed for funding of the existing Centers, this has not been the case, generally. As an example, the EPA contribution to the Ecosystems Research Center at Cornell University in FY 1988 is $540,000, including add-on funding, $40,000 more than was allotted in 1980. Using the GNP price deflator for the period of 1980-1987 of 39%, the funds provided should be $750,000 just to preserve parity. Reduced funding makes maintenance of a core staff for the Centers formidable and time-consuming, decisions on programming and research frustrating, and action on new ideas tentative.

There are some in government who believe that industry will assume the costs for much of the extramural, long-term research program in EPA. It's true that some industries and industrial consortia, such as the Electric Power Research Institute (EPRI), the National Council for Atmosphere and Stream Improvement (NCASI), the Aluminum Association, the Chemical Manufacturers Association (CMA), and others, have a history of supporting research. But the hope that funds for long-term research and training will be assumed by industry is fanciful.

There are a great many unanswered questions concerning the effects of pollution on health and on the general quality of the environment, and we have it within our power to prevent future catastrophic problems. There should be greater emphasis on understanding the underlying causes of environmental degradation that may prevent problems, rather than supporting crash programs that chase after the problem when damage becomes irreparable.

GRANT PROGRAM FUNDING

(1980–1988, Proposed 1989–1992)



STATEMENT OF WILLIAM ENGEL, DIRECTOR, SOUTH CAROLINA ENVIRONMENTAL TRAINING CENTER, ON BEHALF OF THE NATIONAL ENVIRONMENTAL TRAINING ASSOCIATION

Senator PROXMIRE. Dr. Engel?

Dr. ENGEL. Thank you, Senator. As program leader, I would like to thank this committee for the support you have continued to show to meet our mutual objectives. I am currently the director of the South Carolina Environmental Training Center, located in Sumter, S.C. We have a multimedia training program, that is, we train wastewater treatment plant operators, as well as individuals involved in hazardous waste, hazardous materials, and health and safety training.

This testimony is presented on behalf of the National Environmental Training Association to support the current congressional commitment to the development of a competent national environmental work force.

ENVIRONMENTAL TRAINING

NETA is a not-for-profit association of professional environmental trainers and is supported fully by members dues, grants, publications, and training activities. Over the past several years, Congress has listened to, accepted, and acted upon our recommendations to support environmental training at the federal and state levels.

Significant progress has been made at both levels. The institutionalization of training has begun at the state level through your funding of planning and technical assistance projects in the wastewater and in worker compliance areas.

The EPA has followed your lead with the development of the Office of Technology and Transfer and Training and has committed people and additional funding for the technical assistance projects that you have initiated. The RCRA program and the RITTA initiative which were mandated and funded last year is probably one of EPA's top five initiatives.

Congress has invested several million dollars over the past 5 years for a two-pronged approach toward training personnel at public-owned wastewater treatment plants.

First, the pilot 104g technical assistance project has brought hundreds of plants into compliance. Second, the model state training action plan approach establishes state agency financial and programmatic responsibility for training programs and is based on an integrated compliance strategy.

Thirty states have received assistance in assessing their training needs and capabilities and for developing comprehensive state training action plans. Nine states have implemented these plans.

Maine's Joint Training Coordinating Committee has convinced the Maine Legislature to support training of water pollution control personnel under the same line item funding for public health protection that fire fighters and law enforcement personnel have received. Maryland currently appropriates four times as much funding as they originally received under 104g funding and have expanded technical assistance to water systems. NETA is committed to the state training planning process and will continue to assist states that have these particular needs.

You recognized the impact of the wastewater project last year, and you funded EPA to conduct a similar project in the RCRA implementation and compliance area. EPA responded to your mandate, and the RCRA program is under way.

The Office of Solid Waste and Emergency Response guidance is now soliciting grant applications, and these will be awarded to 10 states.

Your committee has set a precedent and placed a priority on training the American work force in environmental protection. EPA has followed your lead and added funding. Because of your efforts and those of environmental training professionals, EPA has also established the Office of Technology, Transfer, and Training.

CALL FOR LEGISLATIVE MANDATE

NETA looks to your committee for continued leadership and support in maintaining this momentum and direction begun in improving environmental training. Rather than additional funding, we suggest that EPA, to implement this integrated compliance strategy, needs a legislative mandate to direct EPA to implement this integrated compliance strategy in all environmental disciplines, not just in the areas in which they are currently working.

NETA recommends that Congress support the creation of a national environmental technology transfer advisory council. This will be composed of approximately 30 nationally recognized representatives from business, industry, academia, and Government.

We appreciate this opportunity to provide testimony on behalf of the environmental training profession.

Senator Proxmire. Thank you, sir, and I want to thank the witnesses. You are the model of patience, and I very much appreciate it. You have had to wait a long, long time today, and I apologize for that.

[The statements follow:]

STATEMENT OF WILLIAM ENGEL, DIRECTOR, SOUTH CAROLINA ENVIRONMENTAL TRAINING CENTER, ON BEHALF OF THE NATIONAL ENVIRONMENTAL TRAINING ASSOCIATION

INTRODUCTION

This testimony is presented on behalf of the National Environmental Training Association (NETA) to support current congressional commitment to the development of a competent national environmental workforce. This testimony summarizes the current status of training capabilities (including an overview of what has been accomplished with previous Federal appropriations) and presents recommendations for program direction.

NETA is a not-for-profit association of professional environmental trainers and is supported primarily by member dues, grants, publications and training activities. An environmental trainer provides vocational instruction, technical assistance, or employee training in environmental control and regulations. Environmental trainers are employed by educational institutions (universities, community colleges and state training centers), local/state/federal government, private sector industry, and consulting firms.

Over the past several years Congress has listened to accepted, and acted upon our recommendations to support environmental training at the federal and state level. Significant progress has been made at both levels in the understanding of training as a cost-effective compliance and management tool. States have shown interest and responsibility toward comprehensive plans to develop a competent state workforce, which will maintain the level of environmental control mandated by the Federal government. The institutionalization of training has begun at the state level through your funding of planning and technical assistance projects in Wastewater and RCRA compliance. U.S. EPA has followed your lead with the development of the Office of Technology Transfer and Training, and has committed people and additional funding for the technical assistance projects you initiated. The RCRA Integrated Training and Technical Assistance (RITTA) initiative, which you mandated and funded last year, is presently one of EPA's top five initiatives.

Traditionally, states mirror the Federal agency in this area. We can expect, and have already seen a ripple effect in state agency attention and commitment to technology transfer and its ability to arm states to protect their environment.

WASTEWATER OPERATOR TRAINING AND TECHNICAL ASSISTANCE

Congress has invested several million dollars over the last five years for a two-pronged approach toward training personnel at publicly owned wastewater treatment plants. First, the pilot 104g technical assistance project has brought hundreds of plants into compliance with NPDES permits and the Clean Water Act. Moreover, the planning arm has reached all states with a Model Training Action Plan and a national newsletter reporting progress and encouraging long range state agency planning for self-sufficient, and compliance-orientated operator training.

The model plan approach establishes state agency financial and programmatic responsibility for the training program. The model program is based upon an Integrated Compliance Strategy, (ICS) which establishes training as a critical element of a coordinated system for ensuring environmental compliance.

Thirty states have received assistance in assessing their training needs and capabilities and developing a comprehensive plan for utilizing training to achieve compliance. Nine states have implemented plans. Dramatic results have been seen in many states. Maine's Joint Training Coordinating Committee researched, documented and convinced the Maine legislature to support training of water pollution control personnel under the same line item funding for public health protection that fire fighters and law enforcement personnel receive. Maryland weaned itself from 104g funding and currently appropriates four times as much funding as they received in 104g federal funding, and have expanded technical assistance to include water systems.

The wastewater project is in its final year of funding and continues to expand to new states. Missouri, Puerto Rico and Hawaii requested and received assistance in the last few months. NETA is committed to the state planning process and will continue to assist states on a fee for services basis.

RCRA INTEGRATED TRAINING AND TECHNICAL ASSISTANCE INITIATIVE

You recognized the impact of the wastewater project and last year funded EPA to conduct a similar project directed toward RCRA implementation and compliance.

EPA responded to your mandate with the RCRA Integrated Training and Technical Assistance Initiative. Under RITTA, NETA is currently conducting a comprehensive national survey of RCRA training needs among State agency regulatory personnel and the regulated workforce and statewide training capabilities to meet those needs. We will report the findings of the survey to EPA and to you later this year. EPA OSWER's Guidance for RITTA Grant applications was issued in January. Grants will be awarded to ten states to:

1. Develop a five year RCRA State Training Action Plan, (STAP).
2. Develop and implement an integrated and institutionalized RCRA training program as called for in the STAP; and
3. Develop and implement a Waste-minimization program as a demonstration training and technical assistance pilot project for the industrial/regulated community.

The response to the survey and guidance from state agencies and educational institutions has been overwhelming. Forty states sent letters of intent to apply for the ten grants. The activity and interest generated by the project underscores the state's ability and willingness to commit resources and personnel to develop the coordinating mechanisms requisite to a comprehensive approach to RCRA implementation. State agencies are cooperating with educational institutions, community action agencies, trade associations, and industries to identify existing training needs and capabilities. Task forces have been formed to focus on RCRA training activities. You have provided the incentive for comprehensive assessment of the RCRA training universe at both the state and national level. The groundwork has been laid for comprehensive RCRA implementation in every state. However, prudence requires waiting for survey and grant results before appropriating additional funding to expand assistance to more states.

Your committee has set a precedence and placed a priority on training the American workforce in environmental protection. EPA has followed your lead and has added funding for 104g and RITTA in their 1988 fiscal budget. Because of your efforts and those of the environmental training professions, EPA has also established the Office of Technical Transfer And Training.

RECOMMENDATIONS

The National Environmental Training Association looks to your committee for continued leadership and support in maintaining the momentum and direction begun in improving environmental training. Rather than additional funding, we request four directives to EPA.

Integrated Compliance Strategy

The Model, elements of quality training, integrated compliance strategy and two-pronged approach to state agency planning for environmental compliance are a prototype approach and provide planning criterion for all environmental personnel training.

In order for EPA to most effectively implement the Integrated Compliance Strategy, the agency needs a **legislative mandate directing EPA to implement the Integrated Compliance Strategy in all environmental disciplines.**

Office of Technology Transfer and Training

The EPA Administrator accepted and supported the recommendations of his Task Force on Technology Transfer and Training and instituted the new Office of Technology Transfer. We support EPA's new office, new understanding of the training role in compliance and new direction. However, we reiterate the concern of the Task Force that training is an investment in the future, whose value may not become fully realized in the short term because it lacks the visibility and quick reaction to capture management and public appreciation. The Task Force urged "as EPA takes steps to improve and expand its' technology transfer and training efforts, it will be crucial for other Agency managers to reach a shared realization -- that technology transfer and training are integral to the way EPA will do business in the future."

We urge your committee to commend the Administrator and Task Force for their Actions. Your direction to the Agency to continue and to intensify the institutionalization of training through the Office of Technology Transfer and Training can strengthen the fledgling Office and its mission to withstand the turbulence of this election year. It needs time and your support to develop resources and plans to systematically weave training for compliance into each environmental discipline.

Competency Assurance

EPA has recognized the need for a competency assurance program for State and Federal regulatory personnel. Modular training courses and manuals have been developed for personnel to complete a general course and a specialized curriculum. We recommend that Congress supports this effort and directs EPA to mandate state agencies to follow their lead by building training into grant requirements.

Create A National Environmental Technology Transfer Advisory Council

NETA recommends that Congress supports the creation of an Advisory Council (NETTAC) comprised of approximately 30 nationally-recognized representatives from business and industry, academia, and government. NETTAC would meet regularly to address implementation of the Federal Technology Transfer Act, promote initiatives in their organizations, facilitate personnel exchanges, and develop consortia.

The National Environmental Training Association appreciates this opportunity to provide Testimony on behalf of the environmental training profession.

STATEMENT OF NOEL C. WOOSLEY, AMVETS NATIONAL SERVICE DIRECTOR

AMVETS is pleased to present our views on the Administration's proposed budget for the Veterans Administration for Fiscal Year 1989.

The attitude conveyed in the Administration's proposed budget for FY 1989 does not portray a willingness to meet the challenge of adequately caring for those who served in America's military forces. These brave and unselfish men and women have earned certain entitlements and benefits, which a grateful nation says they richly deserve. Many of these entitlements and benefits may well cease to exist if this budget authority is not modified to reflect a true inflation rate. As it stands, this budget proposal will not allow the VA to maintain current services.

The budget request for FY 1989 calls for $27.927 billion to fund medical, compensation, and other programs to care for 27.5 million veterans, eligible members of their families, and survivors of deceased veterans. While this request is some $865 million greater than FY 1988 estimated requirements, it will once again fall short of what is needed in real dollars.

The 1989 budget provides $16 billion for benefit programs, $10.6 billion for medical programs and $501 million for construction. Total agency full-time equivalent employment is expected to be 219,830 - down 2,439 from that which is currently proposed for FY 1988. The VA claims that this loss will once again be absorbed by improvement in productivity, greater automation capabilities and a decreased case load. We have heard this before and yet the time it takes to process a beneficiary's claim continues to increase. AMVETS does not find it acceptable for the VA to modify its timeliness standards in an effort to meet timeliness requirements. In other words, the three months it took to process a claim in 1983, and meet timeliness requirements, now takes six months to process and yet is still considered timely. This is achieved by simply changing the timeliness standard. The VA has what it deems as an acceptable loss call rate, however, they have no way of telling how many claimants call who never get through. This works out somewhat like changing the timeliness standards, as you cannot lose a call you never received.

The Department of Veterans Benefits is under-staffed and over-worked, which tends to compound the problem, and yet this budget proposes to cut an additional 492 FTEE from D.V.B. Of the 492 FTEE's lost, 248 will come from the Adjudication Division and no amount of lower case loads, automation or increased productivity will stop the trend of a steady increase in timeliness which we have witnessed over the last five years.

VA's $10.7 billion request for compensation payments is based on estimates that veterans eligible for monthly payments, along with the survivors of veterans who died of service-connected causes, will decrease slightly in FY 89. The request provides for a 4.2 percent increase in compensation rates and additional legislation will be proposed to index compensation benefits to the annual change in the Consumer Price Index (CPI). AMVETS, as it has in the past, remains opposed to the automatic indexing of compensation and DIC rates to the CPI. The special needs of many service-connected disabled veterans may not be equitably reflected in the general CPI.

AMVETS, like this committee, is concerned with the increased cost of the VA Home Loan Guaranty Program and the Administration's budget request for $658 million in FY 89 to fund same serves to underscore that concern. While the need for improvement in this program is apparent, how to improve it seems quite complex. It is hoped that as the Administration moves to correct various deficiencies within the program they do not lose sight of the fact that this is a benefit program for veterans and not a profit/loss business enterprise. Proposals to remove interest rate limits for VA guaranteed loans is not a way to improve the program. The wholesaling of VA portfolios may be a short term improvement but what happens in the long run? Stopgap measures acted out without proper research will not achieve the desired results. Therefore, AMVETS supports the initiative set forth in S. 2049.

If we may assist the sponsors of this committee in anyway with regard to the passage of S.2049, "Veterans' Home Loan Program Improvements Act of 1988," please let us know.

Although the VA budget calls for an overall increase of $865 million over FY 1988 authority, including $208 million more for medical programs; the increase actually becomes a decrease of approximately $370 million in the current services level. It should also be noted that the proposed budget, which falls far short of the mark, claims it will allow the VA to provide quality health care to 1.2 million inpatients, up 7,055 over FY 1988, and 23.1 million outpatients, up 211,000 over FY 1988. The Administration claims they will be able to provide said quality health care despite inadequate funding and a loss of 1,782 FTEE from DM&S. Here again the introduction of new technology is slated to compensate for these losses. A question that comes to mind is how many direct medical care staff will be involved in these cuts? This question is of great concern because we are unaware of any technology that has a bedside manner.

The Administration's proposed 1989 budget with respect to the aging veteran population appears to be meeting the challenge by ignoring it. This is apparent in the number of new nursing home beds proposed in FY 1989.

To quote the Honorable G.V. (Sonny) Montgomery, Chairman House Veterans Affairs Committee, "The Administration's proposed FY 1989 budget is painfully inadequate."

Therefore, AMVETS would like to bring to the committees attention a budget proposal by veterans for veterans. We are again proud to have joined with the Disabled American Veterans, the Paralyzed Veterans of America and the Veterans of Foreign Wars of the United States in formulating a detailed, independent budget proposal for the Veterans Administration's FY 1989; copies of which have been widely distributed to include the members and staff of this committee. We are of the opinion that this independent budget proposal is realistic in it's content and will better serve the VA - who will then be able to better serve America's veterans.

SUBCOMMITTEE RECESS

Senator **Proxmire**. The committee will stand in recess until tomorrow morning when we will reconvene.

[Whereupon, at 1:17 p.m. Monday, May 9, the subcommittee was recessed to reconvene at 10 a.m. Tuesday, May 10.]

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT-INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1989

TUESDAY, MAY 10, 1988

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10 a.m. in room SD-138, Dirksen Senate Office Building, Hon. Jake Garn presiding.

Present: Senators Proxmire, Garn, Grassley, and Inouye. Also present: Senators Cranston, Gramm, Mitchell, and Wilson.

NONDEPARTMENTAL WITNESSES

HEARING PROCEDURE

Senator GARN. The subcommittee will come to order. Today we will hear from public witnesses about the proposed budget requests of the National Aeronautics and Space Administration, the National Science Foundation, the Environmental Protection Agency, and the Department of Housing and Urban Development.

I would like everyone to keep in mind that we in Congress are operating under very severe budgetary pressures and should you recommend that we increase funding for a program, it would be very helpful if you could tell us where the added funds might come from.

Under Gramm-Rudman-Hollings, we have to make those choices. The limits are set, and it must be taken from some place if you have an increase.

I would also like to go over the procedures that we will use, because there are so many witnesses. I ask that you keep your presentations to no more than 4 minutes. When 1 minute is left, the yellow light will come on. When the time is up, the red light will then turn on.

Our first witnesses are supposed to be Senators. Of the 6 years that I chaired this committee and the Senate Banking Committee, we always started on time, even if Senators were not here, and they are notoriously late. So we will not wait for them, and we would like to start with Dr. June Scobee, chairman of the board of directors of the Challenger Center for Space Science Education, accompanied by former Administrator of NASA James Beggs, and Mr. David Winstead, president of the Challenger Center, and so if you would like to come to the witness table, we would be happy to start.

STATEMENT OF JUNE SCOBEE, CHAIRMAN, BOARD OF DIRECTORS OF THE CHALLENGER CENTER FOR SPACE SCIENCE EDUCATION

ACCOMPANIED BY:

DAVID WINSTEAD, PRESIDENT, CHALLENGER CENTER

JAMES BEGGS, FORMER ADMINISTRATOR, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Senator GARN. We are happy to welcome you before the committee. Gentlemen, it is a great pleasure to have you before the committee again.

Mr. BEGGS. Thank you, sir.

Senator GARN. Please proceed.

Mrs. SCOBEE. Senator Garn, thank you for the opportunity to testify, and we would like to request that these statements be recorded in the proceedings.

Senator GARN. They will be included in full in the record.

Mrs. SCOBEE. Thank you.

TRIBUTE TO "CHALLENGER" CREW

As you know, the families of the *Challenger* crew came together with an idea to respond to letters from people all over the nation requesting monuments or memorials built to the crew. It was the feelings of the families that not only a living memorial but an opportunity to improve the conditions of education in our country be approached as we came up with an idea of responding to a tribute to the crew.

As a part of that, carrying on the mission for the crew, what was that mission other than to fly, but to explore space. Particularly, the education objectives of that mission were important to children all across the nation as they waited for their lessons.

CHALLENGER CENTER

We feel that as a nation, we are falling behind other countries in regards to science and technology. So important to us is to address the problems of the nation in addition to the memorial aspect of Challenger Center.

Certainly, there are many areas regarding poor performance in our country in science and math, since we have fallen behind, even evidence of factory shutdowns and plant closings. There is, in truth, a sign of a shift to the age of technology. The training of the masses in this area are inadequate. There are many factors that are providing this warning system for us that are signalling us that we are approaching a danger zone.

The ills of the nation are sometimes generally focused on education. The factors that have brought us to this problem area are course offerings in elementary and high schools, a lack of materials, low expectations, not enough teachers, and a shortage of adequate teachers.

Industry is to blame. Particularly when I talk to CEO's, they admit that they are to fault, that they have siphoned some of the better teachers from education to help in industry.

Attitudes of teacher training are important, as well. Challenger Center proposes to make a difference. We truly want to restore the country's competitive edge in the global marketplace. We feel that it is our challenge to work with industry and the government and individuals across the nation to meet these needs.

We want to help increase scientific literacy through the programs in the schools providing interactive televised programs to science and technology museums across the country, as well as through our headquarters facilities site here in Washington, DC.

We want to provide opportunities for learning the scientific methods so that teachers and youngsters aren't afraid of science and math, the hard courses in schools, but actually, can have fun as they are motivated through the theme of space as they work in the classroom first, at the mission centers and the affiliate sites and the headquarters facility.

We want to foster their awareness of social, economic, and ethical aspects of science and technology. We want to promote new partnerships. Already, we have an example of how this system was developed. Teachers in Space are under our aegis at the Challenger Center. We have a network of people around the nation who are taking part in building Challenger Center.

Already, we have collected $3 million from individuals, corporations and industry, foundations who are joining this effort. So already we have money from individuals who want to help. We want to request that the government join industry and individuals in participating with the building of Challenger Center. We think that it will make a great deal of difference long after you and I are gone. Perhaps in history books, we can look back and say that this committee made a difference in helping to build Challenger Center.

I would like to provide an opportunity for Jim Beggs to join me in this presentation.

CENTER KEYED TO EDUCATION

Mr. Beggs. Thank you, June. After the *Challenger* disaster, Mr. Chairman, the families got together to decide what would be an appropriate memorial, and they looked at the various things and decided, I think quite appropriately, that the best thing they could do would be to set up a center that would encompass education, which, of course, has been the mission and was very much the mission of this flight, of the shuttle, of the *Challenger*. Such a center will contribute, I think, immeasurably to the problem we have in this country of improving science and math education across the board.

As you know, Mr. Chairman, we have a severe problem in this country, which is related very much to the fact that our competitiveness in the world has fallen off in the last couple of decades. It is extremely important to rededicate our educational system to the teaching of science and mathematics.

I believe this very effective memorial will provide a very great impetus to that instruction, to the training of teachers, and particularly, to the adding of incentives to the kids to get involved and to become a part of the technological society and become a part of those things that we consider important for the future, including our space program, the space program as the front edge, if you will, the leading edge, of science, research, and technological activities.

GOVERNMENT ASSISTANCE SOUGHT

So I think it is an extremely appropriate memorial. I think it is also appropriate that the federal government take a part in this. June and her colleagues have dedicated themselves to raising at least half the money, and perhaps a tad more than half, and what they are asking for is assistance from the federal government on the other half.

The appropriation that they are requesting of $10 million, I think, is appropriate under the circumstances. Once the Center gets going, I think it will take on a life of its own and be self-sustaining. It has, I believe, all of the elements of a very important adjunct activity to our space program, and so it is an important activity for NASA to support, as well.

I am not in a position to suggest where in the NASA budget this fits as a priority, but I do think it is an appropriate thing to include in that budget.

Senator GARN. Thank you very much. I apologize that time is so brief and we do have so many witnesses to hear. I would just like to take a moment, though, and June has heard me say this before, but I wish to repeat it so that it is in the record, the importance of what she and the Challenger Center Board are attempting to do.

TRIBUTE TO JUNE SCOBEE

Probably the most difficult assignment that I have ever had in my life was when I was asked by the Vice President to go with John Glenn just a few hours after the *Challenger* accident down to the crew quarters at Cape Canaveral and walk into those crew quarters and see June and all of the other family members of those who died and to try and say anything at that point that was responsible and helpful. It was rather a difficult moment that I never forget, June standing up and saying, "Mr. Vice President, Senators, I am the Commander's wife, and I am sure I speak for all of the family members. Don't let them stop the space program."

I have had so much admiration for June and her courage and all of the other family members for them pulling together from what was a situation where there were literally dozens of groups wanting to raise money to build a little monument here or a little monument there, all with good intent and great sincerity, but a very fractured situation.

June and the other family members have pulled it together, not only to have a memorial to their husbands and wives, family members, but something that would be not only just a living memorial to them, but that would go on for generations, as June said a long time after all of us are gone, of being able to educate young people and be of much broader scope than just a memorial or something that was rather transient and passed rather hurriedly.

I obviously have some bias, being a member of that board and having been in space myself. But, nevertheless, it is an important development, well conceived, well organized, and while I personally support the request, I obviously have to repeat what I said in my opening statements: If it were a matter of being able to appropriate another $10 million, I would be in favor of that. We are constrained with finding some place that it has to come from. So it has got to come out of some other function in order to do that.

I wanted to make that statement, that while I am personally supportive, it is a difficult task, and we will have to see how the situation develops as we go through our budget allocations.

But it will not be an easy task to find that $10 million, even though the cause is certainly worthwhile. So I appreciate you coming today, and we will do our best.

Mr. BEGGS. Thank you, Mr. Chairman.

Mr. WINSTEAD. Thank you.

Senator GARN. Thank you very much.

[The statement follows:]

JOINT STATEMENT OF DR. JUNE SCOBEE JAMES BEGGS, AND DAVID WINSTEAD, CHALLENGER CENTER FOR SPACE SCIENCE EDUCATION

Mr. Chairman and Members of the Subcommittee, thank you very much for the opportunity to present testimony on behalf of the Challenger Center for Space Science Education.

Shortly after the tragic accident involving the Challenger Shuttle, flight 51-L, on January 28, 1986, the families of the seven crew members gathered to consider an appropriate memorial to their loved ones. We knew one thing for certain--the crew members would have wanted for their mission to explore, to experiment and to teach to be continued. We decided to carry on with this mission and to build the nation's first interactive space science educational center where teachers and students of all ages and levels of accomplishment could, by using advanced technology and space-life simulators, improve their understanding of and abilities in space, science, mathematics and problem solving.

The Challenger Center for Space Science Education seeks a partnership with the Federal government to provide funds necessary for the vision to become a reality. In order to provide an appropriate memorial to the crew members of flight 51-L and to transform the status of mathematics and science education in the United States, a $10 million appropriation for the cost of the Center, to be cost shared by the Challenger Center, is requested. Because of NASAs ongoing responsibilities for educational programs and the important contribution that this Center will make to educational achievement in math and science, it is appropriate to support the Challenger Center from this funding source.

The math and science literacy among Americans today is tragically inadequate. Many reports have been recently issued citing the poor performance of this country in the areas of math and science. It is well known in our society that the United States has fallen behind most of the western world in the quality of our public education.

A recent report prepared jointly by the National Governors' Association, The Conference Board and the National Science Foundation, stated that "The most demanding challenge facing America's leadership today is to restore this country's competitive position in the global marketplace. . . . Education was viewed by all three groups--business, academia, and government--as the key to the nation's competitiveness. . . . the participants expressed concern regarding the quality of science, engineering, and mathematics education. Although this concern applied to all levels of education, greatest concern focused on the K-12 level."

Five years ago, the National Commission on Excellence in Education, after extensive and exhaustive research, published a report entitled A Nation at Risk. The risk uncovered for the nation is that, given the information age that we have entered, it will no longer be possible for America to retain its global position with only a few exceptionally well-trained people. A high level of shared education is necessary in order to maintain a free, democratic society.

There are numerous indicators of the risk before the United States:

- International comparisons of student achievement, completed a decade ago, reveal that on 19 academic tests American students were never first or second and, in comparison with other industrialized nations, were last seven times.
- Some 23 million American adults are functionally illiterate by the simplest tests of everyday reading, writing, and comprehension.
- About 13 percent of all 17-year-olds in the United States can be considered functionally illiterate. Functional illiteracy among minority youth may run as high as 40 percent.
- Average achievement of high school students on most standardized tests is now lower than 26 years ago when Sputnik was launched.
- The College Board's Scholastic Aptitude Tests (SAT) demonstrate a virtually unbroken decline from 1963 to 1980. Average verbal scores fell over 50 points and average mathematics scores dropped nearly 40 points.
- Both the number and proportion of students demonstrating superior achievement on the SATs (i.e., those with scores of 650 or higher) have also dramatically declined.
- There was a steady decline in science achievement scores of U.S. 17-year-olds as measured by national assessments of science in 1969, 1973, and 1977.
- Between 1975 and 1980, remedial mathematics courses in public 4-year colleges increased by 72 percent and now constitute one-quarter of all mathematics courses taught in those institutions.
- Differences in achievement between boys and girls, particularly in mathematics and science, is generally in favor of boys.

There are many factors in this dilemma. Coupled with poor course offerings and low expectations for students is the condition of poor teaching. There are simply not enough teachers being culled from the ranks of academically able students and teacher preparation programs need substantial improvement. The poor teaching methods employed by the poorly prepared teachers result in students having bad attitudes about math and science with attendant discouragement about entering these fields professionally. The teaching of math and science in our schools must be shifted in order to equip students to understand geometric and algebraic concepts; understand elementary probability and statistics; apply mathematics in everyday situations; estimate, approximate, measure and test the accuracy of their calculations; provide high school graduates with the concepts, laws, and processes of the physical and biological sciences; provide the methods of scientific inquiry and reasoning; provide the application of scientific knowledge to everyday life; and provide the social and environmental implications of scientific and technological development.

American students are no longer at the top of the international math and science class. Education in this arena is quite obviously experiencing a breakdown. Much needs to be done in order to turn these students around, to produce the high quality results in mathematics and science education and return to a great enthusiasm for the subjects by both teachers and students.

It is clear that one way to remedy poor results in science and mathematics is to provide opportunities for in-service education. Other means of support for math and science education include curriculum materials other than textbooks. Because science is a process and not a sequence of facts, its presentation needs to be from the point of view of thinking about the physical and natural world using creative problem solving techniques. In order to create an environment in which this occurs, teacher skills in critical thinking, scientific method and creative problem solving must be enhanced.

Currently, most science and mathematics instruction is done on an individual basis with little opportunity to operate in a team situation. In reality, almost all science and technology work is done in groups or teams and students need to be taught how to problem solve in these situations.

Another very critical factor in the quality of science education and the ability of students to perform well and sustain interest in the subject area is the availability of funds for teaching and research. There have been all too many circumstances in the past of science programs failing or being set adrift when money ran short. In order to continue programs and build upon them, it is necessary to have a critical supply of funds dedicated to the programs so that quality of education is not tied to availability of money.

The Challenger Center, conceived as a power to serve our nation, will create a unique learning environment in which teachers learn to teach better and students learn to learn more fully the fundamental nature of math and science and technology using an integrated curriculum approach with space science as the key to learning. No program of its kind exists anywhere in the world.

The mission of the Challenger Center is to further research and advancement in the field of the space sciences; to equip teachers to provide better and more creative, exciting, science instruction; to help students develop scientific and problem solving skills; and to increase the level of science and mathematics literacy in school curricula.

Specific objectives of the program are:

- to help increase scientific literacy through primary and secondary school levels;
- to provide opportunities to learn the scientific method of learning and logical analysis through the solving of realistic spaceflight problems;
- to foster awareness of the social, economic and ethical aspects of science and technology;
- to promote new educational partnerships between teachers, science and technology museums, universities and industry.

The unifying concept of the program--life aboard a deep-space exploration vehicle--will provide both a coherence and curriculum element and a basis for exciting experiences in simulations and laboratory exercises. The program will provide teachers with new subject material and techniques that will allow them to bring the challenges of the real-world of space exploration into the classroom.

There are two primary components in the program--Mission Sites and Affiliate Sites. There are five mission sites with the flagship Space Life Station 2061 located in Washington, DC, at a site donated by the District of Columbia close to a magnet school. The other mission sites will be located in various areas around the country. Criteria for mission site selection include proximity to aerospace facilities; visitor/tourist proximity; population concentration and unique time zone providing one-to-one correlation with school schedules for best telecommunications access. Current plans for mission sites are: Johnson Space Center Visitor's Center in Houston Texas; Kennedy Space Center in Cape Canaveral, Florida; Reuben Fleet Science Center in San Diego, California; and proximity to the United States Air Force Space Command in Colorado.

Affiliate sites will be located in sponsoring science centers, museums, planetariums or schools across the United States. These sites will be the regional and local contact points for the Challenger Center network. Because the limited capacity of Mission Sites will not permit large numbers of participants, the Affiliate Sites will provide Challenger Center with opportunities to serve teachers and students in major population centers and remote areas.

Two program elements are most essential to fulfilling the primary goals of the Challenger Center--student enrichment and teacher support. For educators, Challenger Center will disseminate imaginative science curricula, lesson plans, and learning materials. In addition, the Center will offer workshops in innovative teaching strategies. For students, Challenger Center programs will move far beyond the traditional classroom.

Much needs to be done to support the teachers and students in their commitment to improving skills in the much needed technological areas of today's society. The Challenger Center is designed to increase science and math literacy among young people byd esigning science curricula for use in schools and Affiliate Sites across the nation that will provide students and teachers with simulated space experiences. The Center provides the much needed leadership necessary to ensure that the United States will continue to be the leader in space exploration well into the next century. It also provides the opportunity for the United States to gain the role of international leader in mathematics and science education and provide the further opportunity to transform mathematics and science education in this country.

Nationally renowned leaders from education, science, and government have committed themselves to the success of Challenger Center by endorsing the project and serving on the Board and acting as special advisors. The entire project exists because of the support and commitment from the families of the Challenger crew; Challenger Center is their way of creating triumph out of tragedy.

Senator Garn. Senator Taft?

Senator, if you would excuse me just for a moment, Senator Inouye has arrived, and he was first on the list.

So Senator Inouye, if you would join us, we would be pleased.

VETERANS ADMINISTRATION

STATEMENT OF HON. DANIEL INOUYE, U.S. SENATOR FROM HAWAII

HAWAII NEEDS VETERANS HOSPITAL

Senator Inouye. Thank you very much, Mr. Chairman. I thank you for giving me this opportunity to appear before the subcommittee on a matter of grave importance to Hawaii's veterans. As a veteran myself, I am here to speak on their behalf regarding the need for a veterans hospital in the state of Hawaii. I strongly believe that the establishment of a veterans hospital would bestow equity upon Hawaii's veterans who fought as courageously and proudly as veterans of any other state.

Mr. Chairman, Hawaii has a higher ratio of veterans per capita than any other state in the nation. However, we are one of two states currently without a veterans hospital. All that is available to Hawaii's veterans is an outpatient clinic. Even in comparison to Alaska, the only other state without a VA hospital, there is a great disparity.

While Alaska has one-half the number of veterans residing in its state, it has a veterans center and three satellite centers. Furthermore, Alaska receives approximately $740 per veteran for medical services. Hawaii, on the other hand, receives only $211 per person.

The U.S. Government has an overdue debt to settle with Hawaii's veterans. This debt arises from a simple contract the government entered into with yesterday's soldier and today's veteran. In consideration for the soldier's loyal execution of military duties, the government promised to provide health care services to today's veteran. Hawaii's veterans bravely performed their duties. The government's reciprocal obligation does not cease to exist upon the signing of a peace treaty.

President Teddy Roosevelt put it best when he said, "A man who is good enough to shed blood for his country is good enough to be given a square deal afterward." Mr. Chairman, your support for a veterans hospital for Hawaii would give Hawaii's veterans the square deal they rightly deserve.

HEALTH NEEDS TASK FORCE

Following the Senate Veterans Affairs Committee hearing held in Honolulu last April, the Veterans Administration's Chief Medical Director, Dr. John Gronvall, established a task force to ascertain the health needs of Hawaii's veterans, evaluate the level of services currently provided, and make recommendations for the improvement of the quality, continuity, and access to health care services.

They commented that some of the same attributes that make the island state so attractive to visitors, distance from the mainland, isolation of its outer islands, its cultural heritage, single out Hawaii for special attention to planning health care services for U.S. veterans seeking treatment there.

TASK FORCE RECOMMENDATIONS

The task force recommended that the Veterans Administration construct a freestanding VA medical center on Oahu with hospital, outpatient clinic, and nursing home capability. In support of its recommendation, the task force rendered the following primary conclusions:

First, Hawaii's veterans population is underserved for in-patient services; second, nursing home utilization is substantially below the national average, indicating that the veteran population is underserved. Hawaii's community nursing home utilization is unquestionably the lowest in the VA system, the report said.

Third, the low priority that the Tripler Army Medical Center accords to veterans results in delays as long as 6 months for clinical appointment. The task force was not convinced that additional funds spent in purchasing services from Tripler would improve veterans patient care.

It commented, and I quote, "Tripler's duty of care for veterans is subservient to the Army's basic medical mission." Finally, the only situation the task force found to be more desperate was on the neighbor islands. Throughout its report, numerous references are made to the sheer lack of health care services available for those veterans residing on the neighbor islands.

These veterans are in critical need of in-patient care, out-patient care, nursing home facilities and care, alcohol and substance abuse rehabilitation, and readjustment counseling programs. The task force goes so far as to state that, "This is a significant and serious flaw in veterans programs and must be addressed as an urgent priority."

Mr. Chairman, I would like to commend Dr. Gronvall for his diligent efforts and prompt actions to improve the level of health care services for Hawaii's veterans. Through his support, the task force's immediate and short-term recommendations are in the process of being implemented. Dr. Gronvall has personally recommended and endorsed the veterans medical center as the optimum way to meet the health care needs of Hawaii's veterans. His support and full cooperation have made a monumental difference in the level of services for Hawaii.

Mr. Chairman, I would like to thank the subcommittee for its willingness to aid in improving the health care services in my state. Without your assistance, there would not have been 12 new full-time positions allocated in fiscal year 1988 to assist the veterans residing on the neighbor islands. I sit before you this morning, Mr. Chairman, to respectfully request that $3 million be appropriated in fiscal year 1989 to begin plans for a VA hospital in Hawaii.

I am pleased to inform you that the University of Hawaii and the state of Hawaii are in full support of the hospital. They are committed to negotiate a favorable low-cost lease for the hospital on land it owns near Diamond Head.

This is the current site of the Leahi Hospital. I have been informed that it would cost approximately $33 million to acquire a site for the hospital. Accordingly, the state's and university's firm commitment would save the VA close to that amount. It will also take off a year in the appropriations cycle, thereby speeding up the actual construction.

The late President Kennedy once stated, "Ask not what your country can do for you. Ask what you can do for your country." Hawaii's veterans have not asked what this country can do for them; they have courageously defended our nation's principles of democracy and liberty. Hawaii's brave men and women should not have to ask this country to do what it has promised to provide, proper health care services.

Mr. Chairman, the construction of a VA hospital for Hawaii would begin to rectify the grave inequity evident between Hawaii's veterans and their mainland counterparts. The task force summed it up most eloquently when it stated that a VA medical center would give the Veterans Administration a greater presence in Hawaii and would, at long last, make Hawaii's veteran a first-class citizen as far as health care is concerned. I thank you very much, sir.

Senator GARN. Thank you very much, Senator. I have wanted to get you across the witness table with a long list of questions for a long, long time, but because we have so many witnesses, I will simply have to wait for another day.

Senator INOUYE. You are always very kind, sir. Thank you very much.

Senator GARN. Thank you very much.

Senator Gramm?

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

STATEMENT OF HON. PHIL GRAMM, U.S. SENATOR FROM TEXAS

SPACE PROGRAM

Senator GRAMM. Mr. Chairman, let me begin by thanking you for giving me an opportunity to be here today. I want to talk about America's space program. I want to talk about a concern that I have; I want to talk about the action that Congress took last year and the action the House took this year in its budget resolution, and I want to talk about how that is going to affect the future of America.

I am very alarmed about what we are doing to the entire budget as it relates to science and space. I am especially concerned about the NASA budget. As you, more than any other Member of the Senate are aware, Mr. Chairman, we cut space and science by $700 million last year below the level recommended by the President.

The President has proposed $11.5 billion for NASA this year. The House has cut that amount in their budget resolution by $1 billion. The Senate has provided $11.3 billion in its budget. I wanted to come, Mr. Chairman, and urge this subcommittee to adopt the $11.3 billion figure.

I know we face very difficult budget decisions, and I am proud of the work that I did in terms of putting us in a position where we, like each family and business in America, have to set priorities. I am, of course, acutely aware that every time a program is cut, there is a readymade excuse around the country.

In fact, if they don't order enough toilet paper at Fort Hood, it's Gramm-Rudman that is responsible. But I am concerned, Mr. Chairman, that we are making very poor decisions in setting the priorities of the nation. I think too often we are investing in the next election instead of the next generation, and nowhere is this truer than in the decisions we are making about NASA.

I remember being in Houston when we had the memorial service for our astronauts who were killed in the shuttle explosion, and I thought to myself, as I heard the President speaking, as I saw the public outpouring, that whatever we had lost in terms of that tragic accident we would be able to make up, because there was still a commitment in America to move ahead with the space program.

COMMITMENT QUESTIONED

I have been alarmed in the last 2 years that we are not doing that. I am concerned for the first time since we started the space program under President Kennedy, in earnest, that we have lost our commitment to do what has to be done, to have a viable space program. And I remind the committee, Mr. Chairman, that that is not only critical to science and technology, but increasingly, it is critical to defense.

We are in space today where we were with aircraft in World War I. We are just learning the potential for space in a military context. So I wanted to come today, Mr. Chairman, and add my voice to those who are concerned about what is happening at NASA. If we cut the NASA budget $1 billion below the level recommended by the President this year after a $700 million cut last year, we are permanently relegating ourselves or at least permanently within the context of the coming decade to a second-place position in space.

I don't think most Americans agree with that. I don't think it is in the national interest. I think it is dangerous from the point of view of national defense, and quite frankly, when we continue to pour millions of dollars down a rat hole in subsidizing Amtrak, when we have got money enough to build wildflower research centers in North Dakota, when we are raising the cap on the beekeepers' indemnity fund in emergency spending bills, I believe we have got enough money to invest in space and science, and I waited to come today especially knowing how you feel about the subject and tell you that I am alarmed about it, and I think we need to do something about it, and I think there ought to be a major public debate on this issue.

I am hopeful that you will be successful in this subcommittee, but I think the American people deserve a debate on this issue, and the issue is as clear cut as an issue can be. Are we going to spend money investing in programs with big constituencies for the next election, or are we going to invest in the future of the next generation? I don't think in the last 2 years we have set those priorities right, and I think it is imperative we do it this year.

302(b) ALLOCATIONS

Senator GARN. Thank you, Senator. As I am sure you are aware, I could not agree with you more. I think it is a tragedy in the making, and where we are really in difficulty is within the 302(b) allocations.

The budget at $11.5 billion recommended by the President is adequate to move forward with the space station and other activities. The total budget in section 250 requests, which is space, science, and technology, is adequate from the President, and the Senate-passed budget resolution is not what I would have liked, but it is something we can work with.

Our immediate real problem is the 302(b) allocations. Last year, what was recommended by the Budget Committee was sufficient, and we got wiped out when the allocations and the money was divided up between the 13 subcommittees of the Appropriations Committee. I am very fearful of what is going to take place. A recommended mark by the chairman of the Appropriations Committee reduces HUD-Independent agencies by $1.8 billion below, so I say you outline the problem correctly.

The immediate problem is those 302(b) allocations. It is such a lack of foresight, not just for NASA, but space, science and technology in general, which includes National Science Foundation. Are we going to have enough math and science teachers? Are we going to train engineers? Are we going to have the people to do these things, or are we going to permanently drop back in science across the board?

I think it is a real crime that our colleagues cannot look more to the future, as you said, than November 1988. So I thank you.

Senator GRAMM. Let me just say, Mr. Chairman, that I support what you are doing. I think it is imperative that we have funding at least at our budget level for NASA this year. I think it is also imperative we move ahead in the areas of science and technology. But if that doesn't happen, I want to tell you that I am eager to join you in a fight on the floor about these 302(b) allocations, because I think the American people need to have a clear debate so they know who does and who does not support the future and who does and who does not spend money on political programs for the current day at the expense of the future.

Senator GARN. Thank you very much, Senator.

[The statement follows:]

STATEMENT OF SENATOR PHIL GRAMM

Mr. Chairman and members of the subcommittee, thank you for the opportunity to testify this morning in support of full funding for the NASA budget in fiscal year 1989.

While the President has requested $11.5 billion in fiscal year 1989 for NASA activities, the House of Representatives cut that request by $1 billion in its budget resolution. The Senate's budget resolution assumed some reductions in the President's request, but it approved $11.3 billion. I appear before you today to urge your strong support for the $11.3 billion approved for NASA in the Senate budget resolution. As members of this subcommittee, I know that you are already familiar with the crucial scientific activities that are encompassed by this funding. NASA Administrator James Fletcher, in his testimony before you earlier this year, stated that "This is the year in which we must reinvigorate U.S. leadership in space. And this is the year in which we must make fundamental technology investments in the Nation's future in space."

I might add, Mr. Chairman, that this is the year that we must decide whether we will invest in the next election at the expense of the next generation.

During the debate on the budget resolution, I expressed a concern that we as a nation are in grave danger of losing the cutting edge advantage that America has always enjoyed in science and technology and which has played such a critical role in our efforts to preserve the peace and security in the free world. If we forfeit our historic advantage in science, space, and technology, then there is little doubt in my mind that we would, at the same time, be relinquishing our role as leader of the free world.

Mr. Chairman, the manner in which we act upon the President's budget request for NASA and its space exploration activities will provide clear evidence to the world that we have chosen one of two paths, that the United States remains committed to leadership or that the United States is unwilling to shoulder the special responsibilities that such a position requires.

The President has clearly indicated the direction in which he believes our Nation should move. His policy reaffirms leadership in space as a fundamental national objective and the space station is the key to that leadership.

The men and women at the Johnson Space Center in Houston and at NASA facilities worldwide are prepared to carry out that mission. But they are depending on Congress to provide them with the financial resources to achieve that goal. They will provide the energy and the determination, the intelligence, the imagination, and the sheer grit that it will take to do the job, but only Congress, acting in concert with the President, can provide the money.

Dr. Fletcher, in his testimony to the subcommittee, emphasized this fact when he noted that "* * * failure to provide the full (fiscal year 1989) budget request could be a severe setback to the Nation's commitment to U.S. leadership in space."

Mr. Chairman, we cannot begin to prepare for the 21st century in 1998 or 1999. If we are to remain competitive in the international marketplace and if we wish to play a lead role in the interplanetary activities that will come, then we need to make some crucial decisions today.

Approval of the President's budget request, or at least the levels assumed in the Senate budget resolution, would represent a major investment in the future, a sound investment in the next generation, and in the final analysis, an investment in peace and freedom.

ENVIRONMENTAL PROTECTION AGENCY

STATEMENT OF HON. ALAN CRANSTON, U.S. SENATOR FROM CALIFORNIA

Senator GARN. Senator Cranston?

Senator CRANSTON. Thank you very much. I much appreciate this opportunity to testify before you regarding appropriations for two Environmental Protection Agency programs that are vital to California.

My first request is for $27 million for construction of a defensive system to protect U.S. citizens from raw sewage emanating from Tijuana, Mexico. This is a very, very serious problem in that part of America.

My second request is for $3 million for the San Joaquin Valley air quality study, another serious problem.

INTERNATIONAL SEWAGE PROBLEM

Mr. Chairman, we have a very serious international sewage problem along the United States-Mexican border between Tijuana and San Diego. Mexican sewage is flowing into our country, polluting the federally protected Tijuana estuary, forcing the closure of California beaches and directly threatening the health and safety of the American public.

As you will recall, Congress included language in the 1984 HUD and Independent Agencies appropriation bill authorizing $32 million for planning and construction of a defensive system on the United States-Mexican border to intercept this sewage flowing from Tijuana into the United States.

Congress also appropriated $5 million for the planning and design work. I want you to know that this work is nearly complete and the Environmental Protection Agency is ready to proceed with actual construction of the defensive system in fiscal 1989. The system being planned would collect mexican sewage overflows into the Tijuana River and transport them westward in the United States via pipeline, then pump the untreated sewage back across the border, where they could be returned to the Mexican system.

The total federal cost of the project is $27 million. The entire sum could be spent in fiscal 1989.

I cannot overemphasize the importance of proceeding with the construction of the Tijuana sewage defensive system project in fiscal 1989.

First, as I've previously mentioned, we do have an incredibly serious public health and environmental problem. Moreover, this problem is rapidly worsening. In 1983, when we were seeking authorization for the defensive system project, raw sewage in the Tijuana River was 1 million gallons per day.

Today, incredibly, flows average 8 million gallons per day. This increase is directly attributable to the staggering population growth in Tijuana and to the Mexican government's decision to expand its water distribution system. The population of Tijuana is currently 1.3 million. It is doubling every 10 years, so these flows will keep on growing.

The Environmental Protection Agency and the International Boundary and Water Commission expect Tijuana sewage flows to reach 34 million gallons per day by 1990 and to increase to 100 million gallons per day early in the next century.

Building a defensive system in fiscal 1989 not only will solve the problem at long last, but it will also do so at a cost saving to the federal government.

The pipeline system the Corps of Engineers is recommending has the capacity of handling 310 million gallons per day. This will accommodate not only Tijuana flows, but it would be available to San Diego, as well.

The city of San Diego is prepared to pay its proportional share of the cost of the pipeline system. That would be $23.5 million. But San Diego will only do so if federal funds are made available in fiscal 1989.

Mr. Chairman, the mayor of San Diego has a statement in support of the $27 million appropriation which I request be part of the hearing record.

Senator GARN. It will be included.

SAN JOAQUIN VALLEY AIR QUALITY STUDY

Senator CRANSTON. Switching to the other issue that brings me here, the San Joaquin Valley air quality study, the counties involved have formed A joint powers agency to design and implement an ozone pollution study encompassing the entire San Joaquin Valley. The study will provide, through extensive data collection, modeling, and data analysis, information to make future controls truly effective in reducing ozone. It is structured to deliver, on an almost continuous basis, an ever-improving flow of data and knowledge to be used by the enforcement agencies.

Ensuring the study's completion would mean a one-time federal funding requirement of $3 million for fiscal 1989. I am here to request that amount to the study in the fiscal 1989 HUD and Independent Agencies appropriations bill.

I thank you very much for this opportunity to testify, for your consideration of these requests. I know you will take them as seriously as I do, and I thank you very much.

Senator GARN. Thank you, Senator.

I just make one comment. Quoting from your letter of April 25 to Senator Stennis:

> I am writing in support of the budget priorities reflected in our recently passed Fiscal Year 1989 Budget Resolution with respect to HUD and Independent Agencies and Labor-HHS, Related Agencies Subcommittees. I am particularly aware of the very serious problems that a reductions in the allocation made to the HUD-Independent Agencies Subcommittee would have on the vital programs which fall within the jurisdiction of that subcommittee.

So I commend you for your aid and assistance. However, the reason I quoted you and your strong support of this subcommittee is the tentative chairman's mark for the subcommitte is a $1.8 billion reduction in authorization and $800 million in outlays.

So you talk about a very serious problem in the Tijuana situation that you and Senator Wilson have made us aware of for some time, but we have got very serious difficulties if we have $1.8 billion.

This subcommittee, as you know, last year, got the short end among the other 13, and it looks like we are headed in that direction now. I just wanted to alert you to that fact. We have got problems. I appreciate your letter.

If there is anything that you can do in the next day or two, the full Appropriations Committee meets tomorrow at 3 o'clock tomorrow afternoon. The crisis is imminent.

Senator CRANSTON. I recognize that. I thank you for the warning. I will see if there is anything I can do. I think it should be recognized that both of these, particularly the Tijuana matter, do comprise a very serious public health threat that could lead to the outbreaks of illnesses that could be far more costly to all of us.

Senator GARN. Oh, I don't disagree at all. It is just with a $1.8 billion reduction, it makes it harder to solve the problem.

Senator CRANSTON. I recognize that.

Senator GARN. Thank you very much, Senator.

Senator CRANSTON. Thank you.

[The statement and correspondence follow:]

STATEMENT OF SENATOR ALAN CRANSTON

Mr. Chairman, I very much appreciate the opportunity to appear before the Senate Appropriations Committee Subcommittee on HUD and Independent Agencies to testify this morning in support of FY 1989 appropriations for two Environmental Protaction Agency programs vital to my state of California.

My first request is for $27 million for construction of a defensive system to protect United States citizens from raw sewage emanating from Tijuana, Mexico.

My second request is for $3 million for the San Joaquin Valley Air Quality Study.

Mr. Chairman, we have a very serious international sewage problem along the U.S.-Mexican border between Tijuana and San Diego. Mexican sewage is flowing into our country, polluting the federally protected Tijuana estuary, forcing the closure of California beaches, and threatening the health and safety of the American public.

As you may recall, Congress included language in the 1984 HUD and Independent Agencies Appropriation Bill authorizing $32 million for planning and construction of a defensive system on the U.S.-Mexican border to intercept this sewage flowing from Tijuana into the United States. Congress also appropriated $5 million for the planning and design work of this project. I want you to know that this work is nearly complete and the Environmental Protection Agency is ready to proceed with actual construction of the defensive system in FY 1989.

The system being planned would collect Mexican sewage overflows in the Tijuana River and transport them westward in the United States via pipeline, then pump the untreated sewage back across the border where they would be returned to the Mexican system. The total federal cost of the project is $27 million. The entire sum could be spent in FY 1989.

I cannot overemphasize the importance of proceeding with construction of the Tijuana sewage defensive system project in FY 1989.

First, as I've previously mentioned, we have an incredibly serious public health and environmental problem. Moreover, this problem is rapidly getting worse. In 1983 when we were seeking authorization for the defensive system project raw sewage in the Tijuana River was 1 million gallons per day. Today flows average 8 million gallons per day.

This increase in flows is directly attributable to the staggering population growth in Tijuana, Mexico and to the Mexican government's decision to expand its water distribution system. The population of Tijuana is currently 1.3 million and is doubling every 10 years. The Environmental Protection Agency and the International Boundary and Water Commission expect Tijuana sewage flows to reach 34 million gallons per day by 1990 and increase to 100 million gallons per day early in the next century.

In addition to the daily flows, there are frequent breakdowns in the Mexican sewage treatment system releasing addditional raw sewage. Less than three weeks ago, Tijuana's newest pump station broke down, forcing San Diego to take 13 million gallons a day via an emergency pipeline for treatment at its treatment plant at a cost of $8,000 per day. Another 8 to 10 million gallons a day flowed down the hillsides and Tijuana River into the United States.

Building the defensive system in FY 1989 not only will solve the problem at last, but it also will do so at a cost savings to the federal government. The pipeline system the Corps of Engineers is recommending has a capacity of handling 310 million gallons per day. This will accommodate not only Tijuana flows, but would be available to San Diego as well. The City of San Diego is prepared to pay its proportional share of the cost of the pipeline system ($23.5 million), but will only do so if federal funds are made available in FY 1989. This is because involvment of San Diego hinges upon award of a EPA secondary treatment construction grant in FY 1989, the last year of the construction grant program in California. A $27 million appropriation is necessary to ensure the award of the secondary treatment construcion grant to San Diego. I would like to add that although we are talking about a larger project capacity because of San Diego involvement, it means a considerable cost savings to the federal government because of the economies of scale. I understand an all-federal project just to handle Tijuana flows would cost at least $42 million.

Mr. Chairman, the Mayor of San Diego has a statement in support of the $27 million appropriation which I would like to request be made part of the hearing record.

I urge the Subcommittee to include the necessary funds in the FY 1989 HUD and Independent Agencies Appropriation Bill for this defensive system.

Mr. Chairman, I would now like to turn to another matter that I consider extremely important -- funding for the San Joaquin Valley Air Quality Study. The San Joaquin Valley is home to nearly 2.4 million people. It is often referred to as the nation's "breadbasket" because it has some of the most fertile agricultural land in the country and produces an annual agricultural crop of $8 billion.

The San Joaquin Valley is equal in size to New Hampshire, Massachusetts and Connecticut combined and comprises the counties of Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare. The problem is that the valley consistently exceeds the federal ozone standard. The air pollution level, in addition to posing a serious threat to health, is damaging the valley's $8 billion agricultural crop, damaging trees and potentially affecting Giant Sequoia reproduction in the National Parks.

The air quality problem in the valley has been recognized for a number of years. Major emissions controls for stationary sources were instituted twice, in 1980 and 1983, in the southern portion of the valley. Similarly, automobile inspection and maintenance requirements have been initiated in several counties. In spite of such efforts, the ozone level has not been appreciably reduced and several counties are facing the threat of sanctions imposed by EPA.

The potential economic consequences of this situation are substantial and could cost the region and the nation hundreds of millions of dollars per year in reduced agricultural production and constrained commercial development.

The concern is that additional controls will be required, as is most likely once Congress passes the Clean Air Act Amendments, and those controls will be costly and not effective unless the valley is able to conduct the study and collect the information needed to devise an appropriate control strategy.

Part of the problem in the past has been that the air pollution problem has not been tackled on a valley-wide basis. The number of pollution sources are many and varied. What is not known is the chemical makeup and percentage amounts contributed by each of the sources to the total problem. Much of the valley's ozone is thought to be attributable to the long-range transport of pollutants originating in coastal urban centers and other areas.

The counties involved have formed a joint powers agency to design and implement an ozone pollution study encompassing the entire San Joaquin Valley. The study will provide, through extensive data collection, modeling, and data analysis, information to make future controls truly effective in reducing ozone. It is structured to deliver, on an almost continuous basis, an ever improving flow of data and knowledge to be used by the enforcement agencies.

The total cost of the study will be $9 million. Of that amount, a third, or $3 million would be borne by the state, another third through a combination of county and private industry sources, and a final third by the federal government. The federal funding is critical since most of the private funding that has already been committed to the study is contingent upon federal funding being provided.

Ensuring the study's completion would mean a one-time federal funding requirement of $3 million for FY 1989. I am here today to request that amount for the study in the FY 1989 HUD and Independent Agencies Appropriation Bill.

Again, I want to thank the Subcommittee for this opportunity to testify and for its consideration of these requests. Thank you.

LETTER FROM MAUREEN O'CONNOR, MAYOR, SAN DIEGO, CALIF.

May 5, 1988

The Honorable Senator William Proxmire
Chairman
Senate Appropriations Subcommittee
on HUD and Independent Agencies
Room 142, Dirksen Office Building
Washington, D.C. 20510-6025

Dear Chairman Proxmire:

I am requesting that you appropriate funds in Fiscal Year 1989 for construction of a project which is a solution to the Tijuana sewage problem. City business prevents me from appearing before your committee; however, I did want to include a statement for the record.

I appreciate your continuing interest in the international sewage treatment problem along the border between Tijuana, Mexico and the City of San Diego. The San Diego metropolitan area continues to need your help to prevent the pollution of the Tijuana River Valley and Estuary and the beaches of California. It is calculated that today the average daily flow of raw sewage through the Tijuana River and the federally protected saltwater estuary is eight million gallons. The increase in sewage flows is the result of that city's population increase and of the government of Mexico's decision to expand the water distribution system in Tijuana. This is an increase of 800 percent from 1983 when Congress first authorized funding for treatment works to address the problem. Until 1985, the raw sewage flow in the Tijuana River was 1 million gallons a day on a bad day. Recently, flows continued at 12 million gallons a day for over a month. In addition to this daily flow, there are frequent breakdowns in the Mexican sewage works resulting in flows of raw sewage into the United States. Tijuana's sewage treatment plant suffered structural failure in late October, 1987; for four months, 20 million gallons a day of raw sewage was discharged directly into the ocean 5.6 miles south of the U.S./Mexico boundary. On February 2, 1988, the pipeline carrying sewage to Tijuana's treatment plant was damaged and 20 million gallons were discharged into the United States over a 24 hour period. The problem is getting worse.

In August of 1986, $5 million was released by the Office of Management and Budget to the Environmental Protection Agency to begin the planning and design of a defensive system to protect the health and environment of the Tijuana River Valley and the San Diego metropolitan area. The work done with these funds has resulted in a project which has been termed the "Big Pipe". Actually, there are 2 designs being prepared for this project, both having identical flow capacities: 100 million gallons a day average daily flow for Tijuana and 240 million gallons a day average daily flow for San Diego. Today I am requesting an appropriation for the construction of this pipeline system which will have the capacity to not only capture the entire Tijuana sewage load and convey it back to Mexico, but also be a part of the City of San Diego's treatment and reclamation program. The City will pay approximately $300,000 for the cost of the design work and its share of the construction cost for that portion of the pipeline system associated with capacity for San Diego's sewage.

The defensive pipeline will enable the federal, state and City governments to address several sewage treatment problems in combination. The precise size and configuration of the pipeline system will be determined by design engineers based upon economy and the need for operational flexibility. At this time, that determination has not been made. The San Diego City Council and I, however, are on record as supporting a system, whatever the configuration may be, that provides a total capacity of 340 million gallons a day average daily flow.

The City of San Diego is requesting an appropriation in Fiscal Year 1989 for construction of the border sewage pipeline project. Plans for the system will be complete by mid-May, and construction can begin as soon as federal funds have been appropriated.

I hope that the above information persuades you that San Diego should receive an FY89 appropriation for $27 million. Thank you very much for your consideration of our request.

Sincerely,

Maureen

Maureen O'Connor
Mayor

FEDERAL EMERGENCY MANAGEMENT AGENCY

STATEMENT OF SENATOR ROBERT TAFT, JR., TAFT, STETTINIUS & HOLLISTER

ACCOMPANIED BY MEL SLEMNICK, PRESIDENT, DOSIMETER CORP.

Senator GARN. Senator Taft?

Senator TAFT. Mr. Chairman, I have with me today Mr. Mel Slemnick, who is the president of Dosimeter Corp. He can answer any technical questions the committee might have on this matter.

We appreciate the opportunity to appear here today, and I am happy to tell the chairman that we are here asking for a reduction or an elimination of a particular program rather than adding any money on.

PRODUCTION OF DOSIMETERS

This relates, as I am sure the committee knows, to the production of dosimeters by the federal government in the FEMA budget. The FEMA budget for 1989 contains some $10 million for work in this radiological defense area, and specifically, it includes $3.3 million to provide a surge capacity for the production of dosimeters, the devices which measure radiation and are felt by FEMA to be necessary to our civil defense plans.

The current situation, as I think the committee may know, is that FEMA has an immediate need for 12 million dosimeters installation in various facilities. They have 4 million in various states of repair on hand, so they have a need for 8 million in any case. They estimate their total needs for a surge capability or a major emergency would, perhaps, go as high as 60 million units.

We think that this entire area is improperly taken over by the federal government in an area where at far less expense, and, we believe, with far greater success in obtaining the dosimeters, they should have turned to private industry.

I testified before this committee 5 years ago, now, and I have attached to my written testimony a copy of that testimony and a copy, also, of certain pages of a contract under which FEMA had let a contract for $3 million back in 1984, I believe it was, to produce some 20,000 pilot year dosimeters along with 10,000 chargers that go along with the dosimeters.

As far as we know, in spite of 5 years of work and supposed government research and the like up at Rolla, N. Dak., and elsewhere, no dosimeters have been delivered to FEMA as a result of that contract. Many, many more millions of dollars have been put in annually for this purpose. We have a facility. Dosimeter Corp. is a private industry, is providing under contract the Navy to the Army and to private powerplants and other private users dosimeters which will do the job, dosimeters which, incidentally, are built to meet performance specifications.

As yet, after 5 years from our discussions with FEMA, there are no performance specifications that have come out of Rolla as yet for supposedly a new and cheaper and better dosimeter. They just don't have those specs, and they are not expecting to ask for those specs. They are basing their research on having a capability to tell people how to set up a plant to manufacture dosimeters, but they still have no performance specifications after 5 years.

We feel this is an area where money can be saved. You can go to private industry. The job will be done more quickly and better by private industry. Thank you very much.

Senator GARN. Thank you Senator. We appreciate having you before the subcommittee again.

Senator TAFT. Nice to be here.

[The statement follows:]

STATEMENT OF ROBERT TAFT, JR., COUNSEL, DOSIMETER CORP.

My name is Robert Taft, Jr. I am making this statement on behalf of Dosimeter Corporation, for which I am acting as counsel, relating to a 1989 budget request of the Federal Emergency Management Agency (FEMA). In FEMA's 1989 Budget under the item for "Emergency Management Planning and Assistance, Civil Defense," there is included under B. Radiological Defense, Estimates by Program Element, 2. Instrumentation, page EM 23, 1989 Request - $10,700,000. This line shows "1987, Actual at $6,736,000, 1988 Request at $10,700,000, 1988 Current Estimate at $6,780,000." A copy of page EM 23 is attached as Exhibit A. At page EM 27 of the budget document the 1989 increase is explained in part as follows:

> 1989 Increases The 1989 request includes an increase of $3,920,000 for Emergency Management Planning and Assistance which will provide for the following:
>
> An increase of $130,000 for the instrumentation engineering and logistical support projects described under 1987 and 1988 programs which will be upgraded to plan for and establish a firm foundation for a surge/mobilization base capacity which is consistent with the requirements of NSDD 259.
>
> Funds in the amount of $3,300,000 for commencing the development and implementation of a surge production base for mass production of the instruments required for population protection. This surge production base will be used to sustain production of the instruments required for crisis management. Configuration of the mobilization base will result from the 1988 study.

It is recommended that the entire amount of this increase be refused by this Subcommittee for reasons that will follow.

Based on prior FEMA studies and reports and a personal interview with Joseph Moreland, Assistant Associate Director of FEMA, Office of Civil Defense, FEMA has an immediate need for 12 million devices to read radiation exposure, called "dosimeters." It has on hand about 4 million dosimeters of 1960's production, now in various states of repair. FEMA's plans for complying with NSDD 259 call for a "surge capability" to produce up to 60 million dosimeters in the event of an emergency.

Dosimeter Corporation is a small business, with about 100 employees, located in Cincinnati, Ohio. It has manufactured dosimeters since 1969. During this period it has supplied and continues to supply private industry needs meeting ANSI standards and U. S. Navy and U. S. Army requirements under contracts requiring compliance with their performance specifications. (Mil. R. 24037A and Mil. R 13029B respectively.) Dosimeter attempted under one Navy contract to supply dosimeters using FEMA research. Using that research Dosimeter was unable to meet the Navy's specifications and abandoned that FEMA technology and filled the order from its own technology. Dosimeter dollar volume of Navy, Army, and civilian production over the last three years has been a total dollar volume of less than $6 million annually. During this period Dosimeter has sought to bid on supplying FEMA dosimeter needs without success because of a FEMA policy decision to develop a "new, more effective and cheaper" dosimeter through U. S. Government R & D and pilot production work. Since 1983 this work has been done under contract authorizing pilot production of up to 20,000 units at Rolla, North Dakota. Dosimeter made strong objection to this approach in 1983, as evidenced by written testimony given by me as counsel for Dosimeter, before the House and Senate Appropriations subcommittees in that year. A copy of that Senate testimony is attached as Exhibit B. FEMA's position that this did not violate the private procurement requirements of OMB Circular A. 76 was supported by Congressional funding in FY 1984 and since. While the exact expenditures to date have not been calculated, they have exceeded $1 million per year since. Despite these funds expended, it is admitted that the Rolla work has not yet resulted in any pilot production that meets ANSI performance standards, that no performance specifications have been or are planned to be developed, and that there has been no appreciable addition to FEMA's supply of dosimeters. It is also submitted that the additional R & D believed to be needed before any private production will be sought cannot be completed before December, 1988.

Dosimeter submits that, in view of the failure of performance of the Rolla R & D, the lack of any performance specifications, and the tremendous escalated expense of work over the last five years without tangible results, FEMA should be directed to terminate all dosimeter work at Rolla and within FEMA and to contract all R & D, pilot production, and development of surge production capability to private industry. The failure of FEMA to perform the commitment made to Senator Garn is documented in the extract of FY 1985 subcommittee hearings, a copy of which is attached as Exhibit C.

Moreover, terminating the Government's role in research and production and directing FEMA to buy from private sources with performance specifications offers the best chance of meeting FEMA's goals. Competitive private sources already exist and are meeting armed services and private business needs. The increased market that would result from FEMA private procurement would in all likelihood result in expanded manufacturing capacity and more effective research. At the same time we wish to express to this Committee our serious doubts about the feasibility of FEMA's goal of establishing a "surge capability" for producing dosimeters. We doubt that NSDD 259 is intended to apply to this kind of situation. Such a capability to meet FEMA's 60 million unit goal would, we believe, require expenditures of $40 million to $60 million with practical use of the building and equipment being less than three years. A preferable approach would be to start building inventory from private sources immediately, build up to 4 or 5 million per year, and stockpile instruments. Dosimeters can have a significant shelf life with proper storage and maintenance.

Thus, denial of this appropriation request would be a first step toward meeting FEMA's dosimeter needs. Further, denial of this appropriation would be in keeping with the desire of Government to reduce the budget and make sure that dosimters acquired by FEMA will meet performance specifications.

EXHIBIT A

EMERGENCY MANAGEMENT PLANNING AND ASSISTANCE
CIVIL DEFENSE
(Dollars in Thousands)

B. Radiological Defense

Estimates by Program Element	Page No.	1987 Actual	1988 Request	1988 Current Estimate	1989 Request	Increase/ Decrease
1. Planning and Development........	EM-24	$2,388	$3,067	$2,445	$3,067	$622
2. Instrumentation.................	EM-26	6,736	10,700	6,780	10,700	3,920
Total, Radiological Defense (Budget Authority)............		9,124	13,767	9,225	13,767	4,542

Changes From Original 1988 Estimates.

Reflects a Congressional reduction of $4,542,000:

-$622,000 - Planning and Development
-$3,920,000 - Instrumentation

EXHIBIT B

STATEMENT OF ROBERT TAFT, JR.
COUNSEL TO THE DOSIMETER CORPORATION OF AMERICA

I am Robert Taft, Jr. of the law firm of Taft, Stettinius & Hollister, Counsel of the Dosimeter Corporation of America. Joining me is my partner, Randolph J. Stayin, who is here with me to answer any questions that the Subcommittee may have on which I may not have as full information. We appreciate the opportunity to appear today to bring to your attention an example of wasteful government spending which can yet be avoided through private sector performance of the work which is alleged to be an ultimate goal of the project. We believe that the Congress must make a decision as to whether it wants the Federal Emergency Management Agency (FEMA) to go into the business of manufacturing radiation measuring devices called dosimeters and whether it wants FEMA to conduct in-house production engineering work on such items at substantially higher cost than could be performed in the private sector.

We are all concerned with the looming deficits and difficult budgeting decisions which must be made. I know that you are concerned about finding ways to avoid wasteful spending in order to help reduce that deficit. I hope my testimony will be of assistance to you in finding a way to avoid wasteful spending by reversing a decision which establishes a frightening precedent of the Government creating its own manufacturing capability in conflict and competition with a capability available in the private sector.

FEMA is asking for an authorization of an appropriation to continue "pilot production" of these specialized instruments. These instruments will be produced in a private facility currently under construction in Rolla, North Dakota. We are informed by FEMA that costs associated with the project are: $500,000 in 1981, $1,738,548 in 1982, and $1,200,000 estimated in 1983. While we do not know how much of those funds have been spent, FEMA indicates that it has obligated approximately $1,046,000 to date. The alleged purpose of this project is to develop production engineering for low-cost dosimeters and to produce 20,000 dosimeters and 10,000 dosimeter chargers. FEMA has stated that this production engineering will be transferred to the private sector for out-year procurement of up to 21 million dosimeters and 7 million charging units. At FEMA's estimated cost of $30 per dosimeter and $20 per charging unit, the anticipated procurement would be $770 million.

I have attached as Exhibit 1 to my Statement extracts from the contract for this project which include a cost estimate of $3 million. This does not include the additional cost of $1.6 million which would be payable as rent over ten years for use of the facility. You will note that the contract specifies that production capability created by this installation is 1 million units per year per shift. With the potential of three shifts per year and a ten-year lease, this facility with this investment could produce 3 million dosimeter units per year or 30 million dosimeters over the life of FEMA's lease in Rolla. The contract, lease and statement of work regarding this project define its purpose as being the "production" or "manufacture" of radiological measuring devices. This massive expenditure of tax dollars for a production capability of 3 million units per year raises serious doubts as to FEMA's stated intent to pilot-produce only one run of 20,000 dosimeters.

We believe that FEMA intends to manufacture its entire requirement of dosimeters and chargers and to offer its capability for manufacturing dosimeters for the Army, Navy and other governmental entities which may have need of them. Having invested $3 million in this "production engineering" project, having a $1.6 million in a ten-year lease, and having trained production personnel and established production for 3 million dosimeters per year, FEMA will then be in a position to come to this Subcommittee and ask for procurement of dosimeters to be produced in-house at Rolla. Having already made this large investment to reach this capability, it would be claimed as a waste not to use it to manufacture dosimeters. Since the private sector at this point would have to invest funds in some additional equipment and incur other cost in order to produce the "new" FEMA design dosimeter, the private sector probably would not be able to match FEMA's cost, which at that point would not include additional costs the private sector might have to invest. Having already sunk $4.6 million into creating this manufacturing capability, this Committee would be asked to find that it has only one responsible choice, to support in-house manufacture of the dosimeters.

The Dosimeter Corporation of America (D.C.A.) is a small business which manufactures dosimeters in Cincinnati, Ohio. It has an impressive list of customers which purchase D.C.A. manufactured dosimeters and a list of such customers is attached hereto as Exhibit 2. D.C.A. believes that it can conduct the production engineering developmental work and produce the 20,000 dosimeters and 10,000 chargers at approximately one-third to one-half of the $4.6 million investment anticipated by FEMA. D.C.A. believes that use of its facility, much of its current equipment, its trained production personnel and experienced production engineers would result in substantial cost savings on this project. The exact amount of cost savings would depend, of course, upon the contract requirements of FEMA. The real world production experience of D.C.A. would be invaluable to FEMA in developing the production engineering design. It seems ludicrous that a government agency that has never mass produced a dosimeter would not take advantage of the economies and efficiencies of a private sector company that specializes in what FEMA is attempting to achieve.

FEMA made this decision to do the production engineering in-house without any consultation with or requests for bid from the private sector producers of dosimeters. FEMA has not developed specifications or an overall cost target for its production. There is substantial risk of major cost overruns in their absence. It made this decision without doing the required OMB Circular A-76 cost comparison which is required in order to determine whether or not it would be economically more feasible to do this work in the private sector than in-house.

OMB Circular A-76 states that:

> In a domestic free enterprise economic system, the Government should not compete with its citizens. The private enterprise system, characterized by individual freedom and initiative, is the primary source of national economic strength. In recognition of this principal, it has been and continues to be the general policy of the Government to rely on competitive private enterprise to supply the products and services it needs... The Government's business is not to be in business. Where private sources are available, they should be looked to first to provide the commercial or industrial goods and services needed by the Government to act on the public's behalf.... When private performance is feasible and no overriding factors require in-house performance, the American people deserve and expect the most economical performance and, therefore, rigorous comparison of contract costs versus in-house costs which should be used, when appropriate, to decide how the work will be done.... Certain functions are inherently governmental in nature, being so intimately related to the public interest as to mandate performance by Federal employees.... "Governmental function" is a function which must be performed in-house due to a special relationship in executing governmental responsibilities. Such governmental functions can fall into several categories:

> (3) in-house core capabilities in the area of research, development, and testing, needed for technical analysis and evaluation and technology base management and maintenance. However, requirements for such services beyond the core capability which has been established and justified by the agency are not considered governmental functions."

FEMA claims that it is not subject to A-76 in this matter because it is research and development. We would like to know why a production capability of 30 million dosimeters would be considered research and development? Certainly, a much smaller investment in capital equipment and plant could achieve the alleged production engineering results for 20,000 dosimeters. More importantly, my client already has the trained employees, production knowledge, and much of the machinery and equipment which will be required for this project. If this work were being done through my client or another private company (and at least one other such facility exists in the U.S.), we believe greater cost savings could be achieved by avoiding the purchase of much of the equipment, the cost of training new personnel in the techniques of producing a dosimeter, and the payment of $1.6 million in rent.

FEMA states that the decision to work in-house was not based on cost factors but was based on the need to conduct development where the government could control the collection of data on all associated processes, where there can be intense scrutiny of each manufacturing step to identify and solve problems as an integral and necessary part of development. There is absolutely no reason why FEMA cannot accomplish these purposes in a private sector plant at a lower cost. More importantly, FEMA would have the advantage of experienced private sector personnel and engineers to assist it in solving the problems they anticipate in preparing an adequate set of specifications to meet large scale procurement. It is important to note that in the original decision to go forward with research and development of a low-cost dosimeter in 1976, the stated intention was to contract out the pilot production phase to the private sector.

It is also important to note that in the early 1960's, the Federal Government contracted with a division of the Bendix Corporation to do research and development on dosimeters. The Bendix work has been the basis upon which FEMA conducted additional research and development in-house to produce its current design. In conjunction with the current in-house FEMA research, a part of that research was contracted out to Monsanto to develop a unique plastic which can be used in the FEMA designed dosimeter. If research and development on dosimeters was not a governmental function core capability in the Bendix research, the Monsanto research, and the 1976 U.S. Government decision to do this same production engineering in the private sector, by what magic has production engineering now been transformed into core capability research which must be done in-house?

FEMA has questioned the capability of the private sector contractors to conduct this work based on alleged government problems in the past with dosimeters produced by those manufacturers. For example, FEMA has pointed to two contracts which D.C.A. has had with the Navy and alleges a 10% and 9% defective rate. My client's records under those contracts indicate a 0% and .8% defective rate. On the first contract Dosimeter has no record of any returns even though there was a one-year warranty in the contract. But assuming FEMA's number for defects, it still would indicate a maximum of 1.2% defective rate. On the other contract D.C.A. replaced in warranty 331 returned dosimeters out of 40,000 dosimeters shipped (.8% returned and replaced). The facts do not support FEMA's assertions as to the quality of the D.C.A.'s work. D.C.A. cannot speak for, nor be held responsible for the performance of its competitors.

FEMA states that its "decision reflects the fact that its laboratory experience and the production experience available in the private sector are too uncertain and unproven to allow award of a good contract to assure the desired product." We believe that the facts prove that FEMA is completely wrong. In fact, it is FEMA whose design and production experience are too uncertain and unproven to be conducted in-house to assure the desired product. In fact, the FEMA production facility does not yet exist.

Another factor that FEMA states in its decision to use government facilities was the "need to maintain levels of competency and expertise in precision manufacturing at the William Langor Jewel Bearing plant." We are informed that there are some procurement officers that doubt the competency and expertise at that plant. In any event, that is irrelevant since the FEMA project will not be conducted in the William Langor Jewel Bearing plant but in a facility owned by the Rolla Development Corporation and is located somewhere in the vicinity of the William Langor Jewel Bearing plant.

It has been the policy of the Federal Government to rely on private enterprise to provide commercial goods and services and not start or carry on any activity to provide a commercial product or service if the producer or service can be procured more economically in the private sector. OMB Circular A-76. FEMA cannot and did not attempt to justify its decision to go in-house on this project on a cost basis. It cannot establish a reasonable basis for its conclusion that it can do the work required by this project better in-house than it can be done in the private sector. I know from my own experience on the Senate Armed Services Committee, as I'm sure this Committee does, that development is done on a regular basis in the private sector. I have always believed that a Government agency generally cannot do it as efficiently, economically, and effectively as the private sector can.

It seems to me that neither the facts nor rationale justify categorizing this activity as calling for in-house performance by Federal employees. I very much appreciate you giving me the opportunity to express our views before you and urge that you require this work to be returned to the private sector before any further expenses are incurred by the taxpayers on this project. It is our understanding that none of the equipment has yet been installed in the Rolla plant, the lease has not yet been signed, and construction has not yet been completed. Therefore, it is not too late to shift this work to the private sector at great cost savings to the Federal Government. In that regard we urge that pending your consideration of this matter, FEMA be requested immediately to stop further expenditures, commitments, and activity on this project until this matter has been resolved. In particular, the General Services Administration intends to sign the lease on behalf of FEMA in the very near future which will create the obligation of $1.6 million over ten years. I appreciate your kind consideration of this request.

EXHIBIT 1

FEDERAL EMERGENCY MANAGEMENT AGENCY
MODIFICATION OF INTERAGENCY AGREEMENT

NTERAGENCY AGREEMENT NO. EMW-E-0694	2. MODIFICATION NO. M006	3. EFFECTIVE DATE See Blk. 12	4. PROJECT/REQUISITION NO. 12651

PAGE 1 OF 1

SSUED BY
Federal Emergency Management Agency
Acquisition Management Division
500 C Street, S.W., Room 728
Washington, D.C. 20472

6. AGENCY PERFORMING SERVICE
Defense Logistics Agency
Civil Preparedness
Defense General Supply Center
Attention: DCPO
Richmond, Virginia 23297

Pawlowski

PROJECT TITLE
Part 1: Mobilization Base Capability for Shelter Supplies
Part 2: EMP Protection

ACCOUNTING AND APPROPRIATION DATA *(If required)*

83-7-3760-2590-2-8100 (F) $210,000 Increase

DESCRIPTION OF MODIFICATION

The purpose of this modification is to increase funds for Part 2.

Accordingly:

1. In Block 10, add the following Accounting and Appropriation Data under Part 2:

"83-7-3750-2590-2-8310 (F) $210,000 Req. 12651"

2. In Block 11, delete the Total Value of Agreement and substitute the following:

a. "$3,522,200 - Total Value of Agreement"

b. "$210,000 - Total Amount Funded FY 1983"

3. The total funding for Part 1 and Part 2 of the Agreement is $2,238,548 and $514,200 respectively. The total funding is now $2,752,548 and is summarized below:

	"FY 1981 Funding	FY 1982 Funding	FY 1983 Funding	Total Funding
Pt. 1	$500,000	$1,738,548	$-0-	$2,238,548
Pt. 2	44,200	260,000	210,000	514,200
	$544,200	$1,998,548	$210,000	$2,752,748"

The Total Value of the Agreement is increased by $210,000 from $3,312,200 to $3,522,200.

$3,000,000 for Part 1 and $522,200 for Part 2.) The balance of $769,452 remains unfunded, 761,452 for Part 1 and $8,000 for Part 2 and is subject to the availability of funds during Y 1983.

t as provided herein, all other terms and conditions of the agreement remain in full force and effect.

GNATURE OF PERSON AUTHORIZED TO SIGN George W. Moll	DATE FEB 28 1983	12. SIGNATURE OF PERSON AUTHORIZED TO SIGN	DATE 28 FEB 1983
E NAME & TITLE OF PERSON AUTHORIZED TO SIGN		13. TYPE NAME & TITLE OF PERSON AUTHORIZED TO SIGN	

FEDERAL EMERGENCY MANAGEMENT AGENCY

INTERAGENCY AGREEMENT

PAGE 1

1. INTERAGENCY AGREEMENT NO. EMW-E-0694

2. EFFECTIVE DATE See Block 15

3. PROJECT/REQUISITION NO. 06131 and 12601

4. ISSUED BY
Federal Emergency Management Agency
AMD/Telecommunications Branch
1725 I Street, NW (GSA Bldg)
Washington, DC 20472
Attn: Les Davison (202)566-1752

5. AGENCY PERFORMING SERVICE
Defense Logistics Agency
Civil Preparedness Office
Defense General Supply Center (Attn: DCPO)
Richmond, VA 23297

6. NAME, TITLE & PHONE NUMBER OF EACH GOVERNMENT PROJECT OFFICER FOR BOTH AGENCIES

Carl Siebentritt (202)566-1617
(FEMA PO)

Tom Avino (804)275-4001
(Other Agency's Project monitor)

7. PROJECT TITLE
Part 1:Development and Implementation of a Mobilization Base Capability for Shelter Sup
Part 2:EMP Protection for Broadcast Stations and EOC's

8. PROJECT OBJECTIVE

Part 1: to establish a mobilization base capability for the production of radiological sets for shelters and postattack recovery

Part 2: to support a program that will provide EMP protection of selected broadcast stations and EOC's.

See page(s) (for work statement)

9. PERFORMANCE PERIOD OF AGREEMENT From the effective date of this agreement until 30 June 198
for Task 1, and until 30 September 1982 for Task 2

10. ACCOUNTING AND APPROPRIATION DATA
Part 1: 81-1-2111-2500-2-6320 ($130,000) 06131
81-1-2121-2500-2-6320 ($290,000) $500,000 (F)
81-1-2111-2590-6240 ($60,000-Navy)

Part 2: 81-1-3117-2500-2-6320 ($44,200) 12601
[illegible] $44,200 (F)
(F) 213,200 [illegible]

11. DOLLAR VALUE OF AGREEMENT
$3,312,200
Total value of agreemen

$44,200 Total amoun
funded FY 81 53

2,768,000 subject to
availability of funds f
FY82 and FY83

12. FUNDING. (The Federal Emergency Management Agency [illegible] amount of this agreement, upon receipt of a properly executed Standard Form 1080 or 1081. The [illegible] in original and six copies, [illegible] agreement number and accounting data, and transmitted to the following office for funds action.)

FEMA Contracting Officer
Telecommunications Branch (Davison)
1725 I St., NW (GSA Bldg)
Washington, DC 20472

(Any funds not utilized for the performance of the work described in this agreement must be returned to the Federal Emergency Management Agency.)

13. PURSUANT TO THE AUTHORITY OF

PL 81-920, Section 401(c) and Section 405

(The Federal Emergency Management Agency may enter into this agreement. The person executing this agreement has a written delegation of authority to act on behalf of the agency.)

14. SIGNATURE OF PERSON AUTHORIZED TO SIGN	DATE	15. SIGNATURE OF PERSON AUTHORIZED TO SIGN	DATE
	6/22/81		JUN 25 1981

SCOPE OF WORK

The Defense Logistics Agency (DLA), Civil Preparedness Office (DCPO) in cooperation and coordination with FEMA shall utilize necessary facilities, personnel, and such other services as may be required for the establishment of a mobilization base capability for the production of radiological sets for shelters and postattack recovery. This project includes but is not limited to the following tasks and subtasks.

- Evaluate problems associated with the production, preprocurement, transportation, tooling, and/or special requirements associated with mobilization base capability.
- Examine alternative systems for the base production of these instrument sets and other shelter supplies.
- Establish criteria for and select locations for production from among candidate locations having high unemployment rates and idle production facilities. These are to include:
  - The jewel bearing plant at Rolla, North Dakota.
  - Indian reservations
  - Appalacia
  - Other areas meeting criteria
- Develop strategy for mobilization base capability. Determine magnitude of scale up and how it is to be accomplished.
- Develop production plan using selected resources. For example, molds and tools may be fabricated and maintained at one location and parts molded, assembled and tested at other locations.
- Procure and install capital equipment.
- Procure and install production tooling.
- Procure and install test equipment.
- Fabricate and tests molds.
- Pilot produce 10,000 each low range dosimeters.
- Pilot produce 10,000 each high range dosimeters.
- Pilot produce 10,000 each charging units.
- Provide management and engineering support to all phases of this project. The resources of the FEMA RADEF Instrument Test Facility shall be used as the prime source of technical expertise for the project.
- Assure, in coordination with FEMA's Radiological Test Facility/DGSC's Directorate of Technical Operations or any other applicable like activity, that required technical support is provided throughout the entire preprocurement and procurement phases.

- If determined appropriate and through competitive efforts, obtain management services from commercial enterprises to provide production and engineering skills.

- Visit prospective manufacturers for the purpose of ascertaining production capabilities, i.e., available equipment, skilled labor, and to determine overall cometency.

- OCPO will administer, authorize, and prepare necessary travel vouchers for all personnel associated with this project, e.g., OCPO and RITF.

- Establish a financial control system so that the estimated costs may be continuously refined and timely adjustments made to the funds available.

REPORTS & MEETINGS

- Monthly letter reports.

- Special reports at significant milestones such as completion of pilot production runs.

- Annual progress reports.

- Meetings will be held with the FEMA Project Officer at intervals necessary to maintain coordination and solve problems as they arise.

SPECIAL CONSIDERATIONS

- Utilization of available surplus resources for this projects requires consultation with other agencies. These include:

  - General Services Administration – Stockpile Management
  - Department of Interior – Bureau of Indian Affairs
  - Department of Commerce – Economic Development Administration
  - Small Business Administration
  - Department of Labor
  - Other DOD including DIPEC.

  The FEMA Project Officer will coordinate the consultative process.

- The FEMA Project Officer will also coordinate requisite relationships and inputs from the various Directorates and Offices within FEMA that are concerned with this project.

COST ESTIMATE

Production capability for one million units per year per shift.

1. Capital Equipment Cost	$ 783,000.00
(a) Installation	31,000.00
2. Tooling	113,000.00
(a) Installation	12,000.00
3. Test Equipment (EST)	35,000.00
4. Molds	251,000.00
5. Pilot Production of Low Range (10,000 Units @ $30) (Includes Training)	300,000.00
6. Pilot Production - High Range (10,000 Units @ $30)	300,000.00
7. Pilot Production of Charging Units (10,000 Units @ $20)	200,000.00
8. Management and Engineering Support	700,000.00
Total	$ 2,730,000.00
Travel and other contingencies @ 10%	270,000.00
	$ 3,000,000.00

AVAILABILITY OF FUNDS

The total amount of this Part 1 of this Agreement is $3,000,000. Partial funding in the amount of $500,000 is currently available for Part 1. Although FEMA does intend to fund the full amount of this Part 1, it assumes no legal liability to provide funds in excess of $500,000. Obligation of the balance of the funding is contingent upon the future availability of appropriated funds for FY82 and FY83.

EXHIBIT 2

DCA CUSTOMERS

Beaver Valley - Duquesne Power & Light
Big Rock - Consumers Power
Calvert Cliff - Baltimore Gas & Electric
D. C. Cook - Indiana & Michigan Power
Fermi 2 - Detroit Edison
Fort Calhoun - Omaha Public Power
Ginna - Rochester Gas & Electric
Kewaunee - Wisconsin Public Service
Monticillo - Northern States Power
North Anna - Virginia Electric & Power
Oyster Creek - Jersey Central Power
Peachbottom - Philadelphia Electric
Prairie Island - Northern States Power
Watts Bar - TVA
Surrey - Virginia Electric & Power
Three Mile Island - Metropolitan Edison
WNP - Washington Public Power Supply System

EXCERPT FROM DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT AND CERTAIN INDEPENDENT AGENCIES APPROPRIATIONS HEARINGS, PART 2, FISCAL YEAR 1985

Senator GARN. I should not say this, but as the father of seven children, I don't know that you can call behavior a science in any event.

Mr. GIUFFRIDA. As the father of five, I agree.

EMERGENCY MANAGEMENT ASSISTANCE PROGRAM

Senator GARN. One of the largest items within the FEMA budget is the emergency management assistance program within State and local emergency management. The budget justification contains $58 million for 50-percent matching grants to support eligible State and local emergency management agencies. While the FEMA funds may be used for salaries, travel expenses, and other administrative costs, it is understood the funds are for accomplishments not funded by other means that also increase emergency preparedness capability.

What oversight do you exercise as being over these funds?

Mr. MCLOUGHLIN. Senator, the funds are distributed according to an allocation formula that involves 50 percent for the previous year's development and about 33 percent for population, about 10 percent for the EMA population of that State, and about 5 percent for each State. What we do then is to pass that money to the States through our comprehensive cooperation agreements, and that is a negotiated process with each individual State between our regions and the States.

What we try to do in that process is to negotiate a set of products or outputs that are definable for those dollars. Then part of our oversight also includes during the last quarter going back to each of the States to determine whether or not there are going to be any surpluses in their official application. If there are, we pull those facts in and redistribute to the other States that do not have enough funds in their initial allocation.

DOSIMETERS

Senator GARN. The subcommittee has previously expressed some concern about the high levels of light needed for the dosimeters to be read. What studies have you done to define the light levels required to reach the high-range dosimeter and the low range?

Mr. MCLOUGHLIN. Senator, we have been aware of the committee's concern on that part. We have had the Oak Ridge National Laboratory that provides us with basic technical assistance in the development of time barred dosimeters to restudy and relook at the light question. Part of the problem is the way in which the light is focused in the dosimeter and the way in which the lens in the dosimeter has been moduled. We are redesigning the dosimeters to take account of both of those corrections and it will be included in our production activity in North Dakota.

Senator GARN. What is the lighting level?

Mr. McLOUGHLIN. Our intent is to provide a dosimeter that can be read, basically, with candlelight in a shelter. That is the minimum level that we would like to be able to use in the field test.

Senator GARN. What consideration have you given to the redesign of the instrument so that they could—and you have already partially answered that—function under office lighting or the level of lighting found in the shelters? Can you give me a little more detail on that redesign?

Mr. McLOUGHLIN. Generally speaking, Senator, it has to do with refocusing the lens in the optical system plus the transmission of light through the dosimeter. With those two corrections we believe that we can produce a dosimeter that will be able to be read in shelters by candlelight.

Senator GARN. How much have you included in the fiscal year 1983 budget for the production of that instrument?

Mr. McLOUGHLIN. About $5.1 million.

Senator GARN. Could you submit a detailed breakdown of your budget request for the design of prototypes and production costs of the dosimeter, including the number to be produced?

Mr. McLOUGHLIN. Yes, we can.

[The information follows:]

DESIGN OF DOSIMETERS

We have allocated $5,150,000 for the production of dosimeters. This includes funds for the Rolla facility to support mass production by helping to solve the inevitable production problems, helping to make and prove out necessary design improvements, and to monitor the quality of the production by the private sector. An additional $500,000 is required for engineering support by Oak Ridge National Laboratory and the FEMA, Emergency Management Systems Test Facility. The following is our best estimate of requirements for fiscal year 1985 for dosimeters:

Technical assistance	$500,000
Pilot production by Rolla	1,300,000
Quality assurance by Rolla	200,000
Startup of mass production by the private sector	3,650,000

The number estimated to be produced by the private sector is 100,000 low-range (200 mR) dosimeters.

NATIONAL EMERGENCY TRAINING CENTER

Senator GARN. You stated that from June 1, 1983, to February 17, 1984, 2,203 qualified students would be turned down at NETC. Please provide a percent distribution by State for those students that are rejected.

Mr. GIUFFRIDA. I will provide that for the record, sir.

[The information follows:]

INTRODUCTION OF PANEL

Senator GARN. Due to time constraints, I am going to begin to call up panels of three to five witnesses so we can possibly speed up the process a little bit. I would like Dr. Richard Nisbett, Mr. Leonard Bruckman, and Mr. William Bryson to proceed to the witness table. Dr. Nisbett is professor of psychology at the University of Michigan. The next witness, Dr. Bruckman, is director of the air compliance unit of the Connecticut Department of Environmental Protection, speaking on behalf of the Northeast States for Coordinated Air Use Management; and Mr. William Bryson, interagency coordinator for Kansas Corporation Commission. Mr. Bryson will speak on the underground injection practices control program.

Dr. Nisbett?

NATIONAL SCIENCE FOUNDATION

STATEMENT OF DR. RICHARD E. NISBETT, PROFESSOR OF PSYCHOLOGY, UNIVERSITY OF MICHIGAN, ON BEHALF OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

Dr. NISBETT. Mr. Chairman, I appreciate this opportunity to present testimony on the National Science Foundation on behalf of the American Psychological Association. We appreciate this opportunity to endorse the administration's proposal to increase the National Science Foundation budget for research and related activities by 10 percent.

BEHAVIORAL AND SOCIAL SCIENCES DECREASE

But we note that the increases for the behavioral and social sciences are substantially less. They range around 6 percent or 8 percent increases as compared to 10 percent overall. This will not go very far toward reversing the trend toward decreased support for the behavioral and social sciences. This has been documented by a recent report by the National Academy of Sciences, which shows that between 1972 and 1987, support for the behavioral and social sciences has decreased by 25 percent. During that same period, support for other sciences has increased by 36 percent.

I would like to give an idea of the effects of this kind of reduction, especially during the period of time where a great number of additional behavioral and social scientists have entered the field. One thing is that researchers move from basic work, where their talents may lie, to applied work, where they may have fewer talents and may lose their way for a substantial period of time.

The second consequence is that researchers greatly increase the time involved in seeking money. I estimate that I have gone from about 5 percent of my time seeking research funds to about 15 percent of my time. At the Institute for Social Research, where I also work, we estimate that full-time researchers spend about 30 percent of their time simply trying to get research funds.

A third consequence, the most serious of all, that talented researchers simply give up. This is unfortunate, it seems to me, just in monetary terms. There are many social science applications that pay back every year more than all the money ever spent on basic research and behavioral and social sciences.

EXAMPLES HIGHLIGHT GOVERNMENT SAVINGS

Let me give just three examples. One is a case of testing in government and industry, preventing round pegs from going into square holes. The study is estimated that this saves the government alone several billion dollars each year.

A second example is programmed instruction; that is, pacing people's learning to their own rate of learning rather than to some fixed rate. A military study estimates that this saves the military alone hundreds of millions of dollars each year. There would be an additional $1 billion saved with the rest of government and industry.

A third example is interesting, because it is often attributed to the Japanese, the so-called Japanese management techniques, quality control circles and worker participation.

These are actually the invention, for the most part, of American social scientists, and at the end of World War II, when Japanese industry was floundering around for some way to rescue their situation, they looked to these techniques and, of course, applied them with great success. Now they are coming back to this country.

It is hard to attach a dollar figure to this. But I have spoken to four executives who feel that these techniques have been the salvation of their industry. These low levels of support for social sciences come at a particularly unfortunate time, because this is a time of real ferment on the behavioral and social sciences.

Let me give just a few examples. Cognitive psychology is a crucial part of the computer science revolution, and, in fact, amounts to, I think, one of our major wedges in the world scene, one of our major advantages. Most of the best ideas on machine learning, for example, come from animal learning or from cognitive psychology. There are equally important advances being made in software development by cognizant psychologists.

A second example is the field of developmental psychology, especially the mental and emotional development of infants. This is a time of remarkable findings there, many of which suggest, by the way, that our attempts create superbabies may be quite mistaken.

A third example is rapid progress being made in our understanding of nonconscious processing of information. That is, we are finding out that people do a great deal of learning and problem solving completely outside of awareness, and as a matter of fact, it is more efficient if it takes place outside of awareness than if it takes place under conscious control.

A fourth example is close to my own field of research on judgment and decision making. We are finding that people understand risk very poorly. They make decisions about their personal lives, and we make decisions about technology that are quite ill advised.

On the other hand, we are finding that people can be taught more appropriate ways to make judgments and decisions with relatively low-cost techniques of instruction. We urge increased support with the 1989 social sciences, so that these ideas can be brought to fruition. Thank you.

Senator GARN. Thank you very much, Doctor.

[The statement follows:]

STATEMENT OF RICHARD E. NISBETT, PH.D., DIRECTOR, INSTITUTE FOR SOCIAL RESEARCH, UNIVERSITY OF MICHIGAN, ON BEHALF OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

Mr. Chairman and Members of the Subcommittee, I am Dr. Richard E. Nisbett, a professor of psychology and program director at the Institute for Social Research at the University of Michigan. I am a former director of the Cognitive Science Program there and am also a former member of the American Psychological Association's (APA) Committee on Research Support. APA represents the concerns of more than 90,000 psychologists, many of whom conduct important scientific research with the support of NSF. In this statement, we comment on the Administration's proposed FY 1989 budget for the National Science Foundation (NSF), focusing on areas of particular concern to psychologists and other behavioral and social scientists.

APA appreciates this opportunity to endorse strongly the Administration's proposal to increase the National Science Foundation budget by 19 percent for FY 1989 to a total of $2.05 billion, and to double the NSF budget over the next five years to $3.2 billion by FY 1992. These proposed increases signify a commitment by this Administration to invest in basic scientific research as part of this nation's goal to become more competitive internationally.

BEHAVIORAL AND SOCIAL SCIENCES RESEARCH

There are many important contributions to be made by the behavioral and social sciences in addressing the critical current concerns of our nation. An excellent review of some of the areas of research that have a great deal of promise in the years to come is contained in the recently (March 1988) released and extensive report of the National Research Council's (NRC) Committee on Basic Research in the Behavioral and Social Sciences. In this report, The Behavioral and Social Sciences: Achievements and Opportunities, the committee recommends a "new national commitment to the behavioral and social sciences" and that the federal investment in the behavioral and social sciences be increased by $240 million annually to capitalize on wide-ranging opportunities for scientific advances.

These recommendations are based primarily on the fact that there has been a severe under-investment in the behavioral and social sciences. Between FY 1972 and FY 1987, according to the report, federal support in constant dollars for behavioral and social research declined by 25 percent, while federal support for other fields of science research increased by 36 percent.

Among the research priorities identified by the NRC committee are studies on:

- Basic processes linking the mind, brain, and behavior. The explosion of discoveries in the neurosciences will have little value without concurrent attention to efforts to discover the links between fundamental brain mechanisms and processes at the behavioral level.

- Motivational and social contexts of behavior. Human aggression, violence, emotional development, and motivation are just a few of the issues that contribute in important ways to such things as our quality of life, academic achievement of students, and worker productivity.

- Theoretical analyses of choice, information, incentives and behavior in markets and other organizational contexts. Unless understood, human biases in judgment can adversely impact planning and forecasting activities in a variety of contexts (e.g., hazardous technologies).

incentive systems based on fundamental research can effectively motivate people for purposes as diverse as enhancing productivity to increasing the likelihood that people will act in ways that protect the environment. Operable quality assurance programs, decision support systems, expert systems, and management information systems will derive only from an incorporation of basic and applied research on cognitive and behavioral processes.

o Cross-national studies on cultures and institutions. Employee work attitudes and performance standards differ markedly across cultures. Understanding the controlling factors of these differences could have profound effects on the efficiency, productivity, and quality of work here in the U.S.

o The development of large-scale databases. Critical to any experimental and empirical research enterprise is the need for easily accessible and substantial amounts of scientific data. Large-scale databases have contributed to major advances in longitudinal studies on psychological development, political behavior of electorates, and population dynamics. Future databases could promote major discoveries in the organization of work and human development.

NSF is a key supporter of psychological, behavioral and social research. While APA commends the Administration for its proposal to increase funding for all of NSF's Research and Related Activities by 10 percent to $1.6 billion, we remain concerned that NSF support for the behavioral and social sciences continues to lag behind that for other sciences. Within the $1.6 billion requested for Research and Related Activities by the Administration, $288.7 million is requested for the Biological, Behavioral and Social Sciences (BBS) Directorate, an 8.6 percent increase. Still less favorable increases are targeted for the Behavioral and Neural Sciences Division (8.1 percent) and the Social and Economic Science Division (6.2 percent) within BBS.

This continues a trend in which percentage increases for the behavioral and social sciences are disproportionately below such increases for the NSF research program as a whole. The result is that although the total NSF budget has been significantly increased (in absolute dollars) over the past few years, the share of the NSF research budget allocated to behavioral and social sciences has diminished markedly, ignoring the rich scientific yield and practical benefits to be gained from supporting such research. In FY 1980, 6.1 percent of NSF's Research and Related Activities budget was allocated for behavioral and social sciences research as compared to only 4.9 percent in the proposed FY 1989 budget. This consistently disparate treatment of the behavioral and social research programs is troubling in view of the promising areas of research identified in the NRC report and its recommendation that federal support for such research be significantly boosted over the next three to four years. APA recommends that Congress target at least 6 percent of the Research and Related Activities appropriation towards the behavioral and social sciences.

In recent years, much national attention has been focused on the inability of our nation to compete effectively in global markets. Basic research in the behavioral and social sciences has a critical role to play in efforts to revitalize the nation's economic and technological base and helps to ensure, over the long term, that our nation has new knowledge needed for economic growth. Our international competitors have long recognized the value of principles derived from research in the behavioral and social sciences and have implemented policies that incorporate an understanding of human behavior that these sciences contribute. For example, in Japan manufacturing companies have introduced quality circles to enhance quality control in production and participatory management to enhance employee motivation. The United States could benefit from the behavioral and social sciences in similar fashion, especially with regard to increases in productivity, if critical areas of research in organizational structures, social and motivational, and decision-making processes do not continue to be overlooked. Just a few examples follow:

- More effective modes of training and education and more effective designs in robotics applications will derive from unified theories of human cognition being developed and tested currently by behavioral scientists. Using rapidly developing results in experimental psychology, artificial intelligence, cognitive science, and the computer and information sciences, psychological scientists are engaged in cutting-edge research on the fundamental aspects of thinking and learning. This research concentrates on modeling the complex processes of human cognition and has applications in computer design.

- The management structure and processes of American industry are often based on behavioral science research, especially with regard to productivity. This research includes studies of the relation between the factors of employee morale and job satisfaction to employee productivity; the nature of employee resistance to changes in management practices; the effect of instituting employee profit-sharing plans; and the relation between styles of leadership to group productivity. All of these areas in turn have relied upon fundamental research on human motivation, emotion, cognition, and social perception.

- Understanding how to maximize employee productivity has derived from behavioral research revealing the importance of and methods for effectively matching specific types of jobs with specific types of persons; personnel selection test validation; and utility analysis. Such issues as quality of work-life; retraining for technological change; and the development and modification of employee work values and attitudes are all significant areas of psychological research that have direct impact on the productivity of our workforce. All these areas of research and research application have relied significantly on continually evolving basic research on attitude formation and change, testing and assessment research, computer-assisted instructional techniques, development of social values, choice behavior, personality development, and social and cognitive development.

- Designing efficient interfaces between humans and machines; optimizing human performance by designing environments in accord with basic principles of human perception and behavior; determining optimal parameters of lighting on roadways; determining the nature and likelihood of risk-taking behavior of drivers operating vehicles under hazardous conditions; and identifying efficient aircraft cockpit display arrangements are just a few examples of practical results deriving from new integrations of basic findings in experimental psychology with basic and applied human factors research.

SCIENCE EDUCATION

APA is concerned about the future of science education at the pre-college, undergraduate, graduate and postdoctoral levels. We recognize that much improvement is needed in our nation's science education activities, and we endorse the President's request of $156 million for the Science and Engineering Education (SEE) Directorate. This represents an increase of nearly $17 million (or 12 percent) over the FY 1988 appropriation. Increased funding for science education is needed to restore a priority to science education programs which were drastically reduced in the early 1980's. Without adequately trained scientists and engineers today, the benefits of scientific research will not be realized tomorrow. The importance of the education of our nation's future scientists is properly reflected in NSF's proposed budget.

Equally important is the need to attend to the scientific and technological (e.g., computer) literacy of the American public for reasons that include the need to retrain displaced American blue-collar workers, the need for the public to properly understand the potential contribution of science and technology to an enhanced quality of life, and the need for Americans to be informed consumers of the benefits deriving from science and technology.

Additionally, APA is pleased with the Administration's proposal to enhance overall spending for education and human resources activities throughout NSF by $45 million in the FY 1989 budget request. This increase would raise the total spent on pre-college (K-12), undergraduate, graduate and professional development (e.g., visiting professorships) programs to nearly $266 million. In keeping with NSF's effort to augment educational support for scientists and engineers, the Administration has proposed to increase spending levels for undergraduate programs by $25 million and graduate and postdoctoral programs and other related activities including professional development and programs for minorities and women. APA is particularly supportive of efforts to enhance research experiences at the undergraduate level, enabling psychology students greater opportunities to participate in behavioral science research projects supported by NSF.

NEW INITIATIVES

The benefits of a multidisciplinary approach to advance knowledge and stimulate scientific innovation have been amply demonstrated in scientific research. In order to accelerate scientific advances that will help to improve our nation's competitive posture, the FY 1989 NSF budget invests significant resources in new science and technology centers. APA supports the establishment of these new multidisciplinary centers which will include centers in the behavioral and social sciences.

Many cutting-edge research areas within the behavioral and social sciences require cross-disciplinary cooperation in order to effectively address the complexities of specific research issues. For example, there are enormous methodological and technical complexities, as well as conceptual complexities, involved in performing research on the neurobiological basis of learning and memory. Consequently, APA supports the multidisciplinary center concept as an appropriate approach to research in the behavioral sciences. In addition, APA supports the NSF proposal to expand support for small multidisciplinary research group awards.

While APA is encouraged by these initiatives to establish and support new centers in the behavioral and social sciences, we are concerned about continued support for field-initiated research at NSF. We hope that expanded support for the centers will not drain needed resources away from independent investigator research, which has been the foundation of innovative basic scientific research at NSF. This is particularly true at a time when our nation seeks to rebuild its economic productivity. APA recommends that support for field-initiated research be enhanced as funding and resources within NSF are increased.

Environmental Protection Agency

STATEMENT OF LEONARD BRUCKMAN, DIRECTOR OF AIR COMPLIANCE UNIT, CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION, ON BEHALF OF NORTHEAST STATES FOR COORDINATED AIR USE MANAGEMENT

Senator Garn. Mr. Bruckman.

Mr. Bruckman. My name is Leonard Bruckman, and I am director of the Air Compliance Unit for the Connecticut Department of Environmental Protection. I an here today to testify on behalf of NESCAUM, the Northeast States for Coordinated Air Use Management. NESCAUM consists of the air pollution control agencies in the eight Northeast states—Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

AIR QUALITY PROGRAMS

NESCAUM's purpose is to promote cooperation and coordination of technical policy issues among the air quality programs and its member states. NESCAUM believes it is essential that federal funding support for state air programs under section 105 of the Clean Air Act be sufficient to address all of the federal program responsibilities which have been delegated to the states.

Sufficient funding for EPA's air management program is also very important to the states, and states rely on EPA to perform their federal responsibilities effectively and to provide states with timely technical assistance and guidance.

Unfortunately, federal funding support for both the states and EPA's air programs has been significantly reduced over the past several years while, at the same time, program responsibilities have expanded greatly.

This trend is particularly disturbing in light of EPA's 1987 report entitled, "Unfinished Business—A Comparative Assessment of Environmental Problems." This report clearly illustrates that air quality impacts on public health and the environment are of greater overall concern than solid waste, hazardous waste, and water pollution impacts and should, therefore, be afforded a higher program priority.

NEED FOR FUNDING ADJUSTMENTS

EPA's proposed fiscal year 1989 budget does not reflect the conclusions of their own report, which strongly suggest that funding adjustments need to be instituted between the various media programs.

NESCAUM believes that within the overall resource constraints for environmental protection, funding adjustments between media programs are warranted and are justified based on the need to protect public health.

Federal support for state air programs has decreased by approximately 20 percent in real dollars during the past 8 years. This decline in federal funding has coincided with the transfer of many federal responsibilities to the states.

These responsibilities include administering the prevention of significant deterioration program, ensuring that stationery sources adhere to new source performance standards and national emission standards for hazardous air pollutants, developing and implementing state implementation plan to address nonattainment problems, and conducting inspection of air pollution sources.

Also, other federal programs have placed additional burdens on state air programs, such as support for remedial action in Superfund sites in SARA title III, 313 reporting requirements.

In addition, new state program initiatives and increased administrative programs costs have presented most state air quality control programs with very serious budgetary constraints. The major objective of state air quality management officials is to protect the public health from exposure to unhealthy levels of air pollutants. To meet this objective effectively, state air quality control programs must have the resources and technical skills both to prevent the deterioration of the existing air quality and to evaluate and act on new threats to public health.

During the past 15 years, the air quality control agencies in the Northeast states have made significant progress in reducing ambient levels of sulphur dioxide particulates, carbon monoxide ozone, nitrogen oxides and lead.

This progress has come through the development of strong base programs consisting of source evaluation and permitting, ambient monitoring for all criteria pollutants, inspection and compliance activities, enforcement activities, and program planning and regulatory development.

These important activities serve as the technical foundation for the state air quality control programs and provide the core program support for preserving the present air quality and addressing new air quality problems. The erosion of the base program is slowly undermining the air quality control program.

It is critical that states have the ability to continue their efforts to protect public health. They will not be able to do this if the base program is continually weakened. The situation is particularly alarming in light of the anticipated increased workload required of states under the Clean Air Act, which is about to be reauthorized, hopefully, in the absence of reauthorization, in which EPA, when it finalizes its post-1987 ozone and carbon monoxide policy.

OZONE AND CARBON MONOXIDE CONTROL

In either case, states will be required to vastly increase a variety of activities related to ozone and carbon monoxide control efforts. EPA acknowledges that this will require a significant workload increase, but the section 105 budget request for fiscal year 1989 does not reflect this increase. State air quality control programs are currently stretched very thin and will only be able to undertake new major initiatives if another current activity which is equally resource intensive is phased out.

To avoid this, NESCAUM recommends that Congress use its authority to provide at least $120 million in fiscal year 1989 for state and local 105 program activities. This request is clearly justified based on the serious decline of 105 support over the past 8 years, the vast increase in program responsibilities, and in recognition of the fact that the air route of exposure to environmental pollutants should be afforded the highest priority relative to other exposure routes, as indicated in EPA's comparative risk programs.

The Northeast air quality control agencies have made significant progress in improving the quality of the air. In order to continue safeguarding public health, state agencies must have additional resources and technical assistance. EPA must also have adequate resources to fulfill their Clean Air Act obligations and to provide the necessary level of support to state and local agencies.

Therefore, NESCAUM hopes that Congress will seriously consider its recommendations on revisions to EPA's proposed fiscal year 1989 budget. Thank you for this opportunity to present our views. I will be happy to respond to any questions that the committee might have.

Senator GARN. Thank you, sir.

[The statement follows:]

STATEMENT OF LEONARD BRUCKMAN, DIRECTOR, AIR COMPLIANCE UNIT, CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION, ON BEHALF OF NORTHEAST STATES FOR COORDINATED AIR USE MANAGEMENT

The Northeast States for Coordinated Air Use Management (NESCAUM) appreciates the opportunity to submit written testimony on the U.S. Environmental Protection Agency's FY-89 proposed budget. NESCAUM consists of the air pollution control agencies in the eight Northeast states: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. NESCAUM's purpose is to promote cooperation and coordination of technical and policy issues among the air quality programs in its member states. To accomplish this, NESCAUM sponsors frequent air quality training programs, participates in national debates, and promotes a variety of research initiatives.

NESCAUM believes it is essential that federal funding support for state programs (Section 105) be sufficient to address all of the federal program responsibilities which have been delegated to the states. Sufficient funding for U.S. EPA's air management program is also very important to the states since states rely on EPA to perform their federal responsibilities effectively and to provide states with timely technical assistance and guidance. Unfortunately, federal funding support for both the states' and U.S. EPA's air programs has been significantly reduced over the past several years while, at the same time, program responsibilities have expanded greatly. This trend is particularly disturbing in light of EPA's 1987 report entitled "Unfinished Business: A Comparative Assessment of Environmental Problems". This report clearly illustrates that air quality impacts on public health and the environment are of greater overall concern than solid waste, hazardous waste, and water pollution impacts, and should therefore be afforded a higher program priority. EPA's propsed FY-89 budget does not reflect the conclusions of their own report which strongly suggests that funding adjustments need to be instituted between the various media programs. NESCAUM believes that, within the overall resource constraints for environmental protection, funding adjustments between media programs are warranted and are justified based on the need to protect public health.

Federal support (Section 105) for state air programs has decreased by approximately 20% in real dollars during the past eight years. This decline in federal funding has coincided with the transfer of many federal responsibilities to the states. These responsibilities include administering the Prevention of Significant Deterioration program, ensuring that stationary sources adhere to New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants, developing and implementing State Implementation Plans to address nonattainment problems, and conducting inspection of air pollution sources. In addition, new state program initiatives and increased administrative program costs have presented most state air quality control programs with very serious budgetary constraints.

The major objective of state air quality management officials is to protect the public from exposure to unhealthy levels of air pollutants. To meet this objective effectively, state air quality control programs must have the resources and technical skills both to prevent the deterioration of the existing air quality and to evaluate and act on new threats to public health. During the past fifteen years, the air quality control agencies in the Northeast states have made significant progress in reducing ambient levels of sulfur dioxide, particulates, carbon monoxide, ozone, nitrogen oxides, and lead. This progress has come about through the development of strong base programs consisting of:

- source evaluation and permitting
- ambient monitoring for all criteria pollutants
- inspection and compliance activities
- enforcement activities
- program planning and regulatory development

These important activities serve as the technical foundation for the state air qulaity control programs and provide the core program support for preserving the present air quality and addressing new air quality problems. Because of the resource constraints of recent years and the expansion of program responsibilities, these base programs have been forced to absorb substantial funding reductions. Although most state air programs have developed alternative funding programs and have phased out non-essential activities, the diversion of base program resources to address new federal and state priorities has increased annually for the past six years. What has been the effect of these reductions?

1. The agencies' ability to evaluate new source permit applications promptly has diminished significantly, resulting in delays of up to a year.
2. Ambient monitoring networks have been scaled back to include only the most essential monitoring sites. Furthermore, the U. S. EPA estimates that up to 50% of the existing ambient monitors in the field are in only "fair to poor" condition due to the lack of resources to replace worn-out monitoring equipment.
3. The majority of Northeast states no longer perform stack emission tests. Stack testing was a common base program activity during the 1970s, but has been phased out of almost all the state air quality control programs due to lack of funds.
4. The number and frequency of industrial source inspections has decreased. Large industrial and utility sources continue to be inspected annually, but numerous smaller sources which may pose an even greater threat to public health are not inspected as frequently as they should be.
5. States have been forced to reduce their involvement in the federal motor vehicle control program and to concentrate completely on managing inspection and maintenance programs. Due to this lack of involvement, many issues of importance to the states are not being addressed sufficiently by EPA.
6. Due to rising operating expenses and the lack of new resources, many state air quality control programs are not able to fill technical and professional staff vacancies. One state has been forced to administer a program which has grown in responsibility and complexity with a staff which has decreased by 33% over the past several years.

The erosion of the base program is slowly undermining the air quality control program. It is critical that states have the ability to continue their efforts to protect public health. They will not be able to do this if the base program is continually weakened. States will be able to continue protecting public health only if the base program is restored.

In response to the problem of decreased funding support and increased program responsibilities, EPA has suggested that states institute program disinvestments and shift resources to meet new program needs. Unfortunately, several years ago, states, on their own initiative, eliminated many low and moderate priority program activities and instituted many measures to enhance the efficiency of other activities in an effort to maximize the effectiveness of their available resources. It is very clear to the NESCAUM states that the states cannot absorb additional funding reductions without compromising the effectivenss of their base programs.

This situation is particularly alarming in light of the anticipated increase in the workload required of states either when the Clean Air Act is reauthorized or, in the absence of reauthorization, when EPA finalizes its Post-1987 Ozone and Carbon Monoxide Policy. In either case, states will be required to vastly increase a variety of activities related to ozone and carbon monoxide control efforts. EPA acknowledges that this will require a significant workload increase, but their Section 105 budget request for FY-89 does not reflect this increase.

A substantial increase in federal 105 funding beyond EPA's propsed level will be necessary to suport the following state and local ozone and carbon monxoide nonattainment activities:

1. Compiling emission inventories, emission projections, analyzing reductions strategies, and developing attainment demonstrations for inclusion in revised State Implementation Plans;
2. Implementing additional existing stationary source control measures (new and revised CTGs);
3. Reducing emissions from minor stationary sources;
4. Implementing measures to increase the effectiveness of vehicle inspection and maintenance programs;
5. Implementing measures to increase the effectiveness of current stationary source control programs.
6. Increasing the level of ambient monitoring for NMHC, NOx, and CO;
7. Actively participating in the development of regional ozone control programs;
8. Analyzing and implementing transportation control measures to reduce vehicle miles travelled, where necessary;
9. Increasing field enforcement and compliance activities;
10. Implementing indirect source review programs in CO nonattainment areas; and,
11. Developing and implementing measures to address CO problems in areas experiencing rapid growth.

The estimated cost of these additional program activities for state and local air quality control agencies nationwide is $35 milion. These activities are expected to be ongoing for several years and therefore will require adequate funding support in FY-89 as well as in future years. Also, many of these new initiatives will rely upon support from the existing base program activities.

Furthermore, many of the air quality problems which the states are addressing today, or will need to address in the future, will require increasingly sophisticated solutions and will therefore be even more dependent on a strong base program. In addition to ensuring that the air quality progress already achieved is maintained and that ozone and carbon monxoide are effectively addressed, states will have to revise current programs or develop new programs to solve the following air quality problems:

* Reducing the exposure to air toxics will continue to require considerable program resources during FY-89. Only a small fraction of the $95 million requested for state air quality control programs is earmarked for controlling air toxics. The Northeast states are proud of their role as national leaders in the development of effective air toxics control programs, but additional funds are required if the potential public health benefits from these programs are to be fully realized. The present resource constraints are making it very difficult for state agencies to pursue the application of emerging control

technologies, promising monitoring techniques (biological testing systems) and more efficient information services.

- Increasingly, incineration is the preferred method of waste disposal in the Northeast. Incineration of municipal, industrial and commercial, hospital, and hazardous waste are processes which have the potential to create adverse public health exposure if their emissions are not controlled effectively. Controlling the emission of dioxins, heavy metals, and other toxic air pollutants at all of these facilities is a major concern and adequate funds must be allocated to all state air quality agencies to address these sources.
- Developing and implementing state programs to reduce acidic deposition, toxic particulate deposition, and visibility impairment will continue to be a high priority for the Northeast states. Although the Northeast states are not capable of imposing emission reductions on the states which contribute most heavily to this problem, they are taking steps to reduce their own contribution to this serious air quality problem.
- States recognize the need to control the emission of toxic air pollutants from hazardous waste sites and to prevent accidental chemical releases from industrial facilities. Failure to do so can pose serious health threats. Additional resources must be identified for these efforts if state agencies are to take on these responsibilities in the future.

It will be impossible for state air quality agencies to effectively address these additional air quality problems while attempting to maintain adequate base programs and address the nonattainment problem if there is not a substantial increase in federal support. State air quality programs are currently stretched very thin and will only be able to undertake new major initiatives if another current activity which is equally resource intensive is phased out. To avoid this, NESCAUM recommends that Congress use its authority to provide at least $120 million in FY-89 for state and local 105 program activities. This request is clearly justified based on the serious decline of 105 support over the past eight years, the vast increase in program responsibilities, and in recognition of the fact that the air route of exposure to environmental pollutants should be afforded the highest priority relative to other exposure routes as indicated in EPA's comparative risk analysis.

The two U.S. EPA air program offices which provide direct support to state programs are the Office of Air Quality Planning and Standards (OAQPS) and the Office of Mobile Soruces. Since 1981, the budgets for OAQPS and the Office of Mobile Sources have decreased by more than 50% in real dollars. These budget reductions have severely undercut the U.S. EPA's efforts to effectively reduce air pollutants which exceed the health standards and to develop the tools and data bases needed to address growing air program responsibilities.

If U.S. EPA's propsed FY-89 budget is not amended, the EPA's air management program will continue to be under severe resource pressures both to continue their overall operation and to adequately respond to the increased demands placed upon them in response to legislative or administrative action concerning the ozone and carbon monoxide nonattainment problem. State programs are directly affected by U.S. EPA's ability to deliver technical support, adopt federal control measures, control in-use vehicle emissions, provide timely program guidance, and develop effective program tools. For example, state agencies will be depending on EPA to undertake the following activities related to the ozone and carbon monoxide nonattainment program:

1. Developing emission inventory guidance (emisison factors, area source estimates, speciation);
2. Developing and applying sophisticated photochemical models (both urban and regional scale);
3. Analyzing photochemical transport and developing regional attainment plans;
4. Developing new and revised Control Technique Guideline documents for stationary sources;
5. Developing Product Control Requirements for highly volatile products (architectural coating, industrial solvents, etc.);
6. Analyzing and developing an effective Alternative Fuels Program;
7. Enhancing the Federal Motor Vheicle Control Program;
8 Implementing cold start testing requirements;
9. Expanding in-use vehicle testing and the recall program;
10. Implementing national gasoline marketing controls, on-board vapor recovery, and gasoline volatility reductions;
11. Tightening vehicle emissions standards for HC, NOx, and CO; and,
12. Providing guidance and technical training on all aspects of the program for staff from federal, state, and local agencies.

NESCAUM recommends that Congress amend EPA's propsed FY-89 budget to substantially increase the budgets for EPA's Office of Mobile Sources and Office of Air Quality Planning and Standards to ensure that these offices have the necessary resources to effectively undertake the essential activities set forth above.

One additional area of the FY-89 budget of major concern to the Northeast states is the lack of resources for training in air pollution control. State and local air pollution control agencies require access to up-to-date technical training in order to maintain strong regulatory programs and to address emerging air quality issues effectively. The U.S. EPA, through its Air Pollution Training Institute, formerly provided state and local air pollution control agency staff with basic air pollution technical training. In recent years, however, this valuable technical assistance has essentially been eliminated. NESCAUM recommends that Congress restore the funding for the Air Pollution Training Institute by appropriating $2.5 million for FY-89. This is roughly equivalent, in real dollars, to funding levels during the 1970s.

The Northeast air quality control agencies have made significant progress in improving the quality of air. In order to continue safeguarding public health, state agencies must have additional resources and technical assistance. EPA must also have adequate resources to fulfill their Clean Air Act obligations and to provide the necessary level of support to state and local agencies. Therefore, NESCAUM hopes that Congress will seriously consider its recommendations on revisions to U.S. EPA's proposed FY-89 budget. Thank you for this opportunity to present our views.

STATEMENT OF WILLIAM R. BRYSON, INTERAGENCY COORDINATOR, KANSAS CORPORATION COMMISSION

UNDERGROUND INJECTION CONTROL PROGRAMS

Senator GARN. Mr. Bryson?

Mr. BRYSON. Thank you, Mr. Chairman. I am here on behalf of the states that have primacy from EPA for the underground injection control programs nationally.

We are in kind of a crisis in this program. The crisis came from the fact that the funding levels for state grants has been reduced $2 million this year from last year.

You remember, this committee was very helpful over the last 2 years in getting the funding level up to $11.5 million on the basis of some things outlined here, and this puts us back to about where we were a couple of years ago as a total state funding package.

Over the years, the injection moral issue has become increasingly complex, or at least the water-related protection parts of it. Part of this was last year, as you know, in the last 2 years, the oil industry went down; a number of environmental problems associated with that in relation to injection laws doesn't go down with the amount of oil. It actually goes up.

There is an increase in the bad wells. More tests need to be required. This is the nuts and bolts of the UIPC as it is implemented at the state level. This takes manpower.

The split on the grant is 75–25. Over the years, since the program really started in 1980, the states have had to pick up an increasingly larger share, and this cutback from $11.5 to $9.5 million would basically put us to the place where, say, Texas would lose 30-some percent; Kansas 30-some percent, and some of the other states in their federal funding level. We would be behind the previous year.

At the same time, the Environmental Protection Agency really feels it necessary to make the requirements more stringent. In some cases, Congress has felt it needs a better groundwater protection program, and it is, as is evidenced by the number of bills that are around here on the groundwater projection: House bill 791, Senate bill 20, and so forth.

GROUND WATER POLLUTION

We are concerned about ground water, and we have one-third of 1 million injection wells out there which we have to regulate. I don't believe EPA could do it as a direct implementation program. The states have to do it. They are closer to the problem, but we have to have some resources to do it. With increased requirements that usually requires more modern reporting, field inspections, nondestructive tests for injection wells, and we tried to go through our states and find a basic funding level which we felt was appropriate for this program.

It is about $14.5 billion just to be where we should be. This is not the EPA enhancements of any regulations which either Congress would mandate that they work on or that they would do themselves in the way of guidance and, eventually, regulations. Our only alternative is if we can't do something, it would be the enforcement option to go back to EPA and try to negotiate some of the program's elements down to a lower level.

We think in terms of the fact that this has been a very good prevention program, preventing ground water pollution. As evidenced, we only have one injection well in the Superfund site, for instance. It is one in Pennsylvania, I believe. We would hate to do that, but this would be our only option as a group of states. I thank you, Mr. Chairman.

Senator GARN. Thank you very much. We appreciate your testimony.

[The statement follows:]

STATEMENT OF WILLIAM R. BRYSON, INTERAGENCY COORDINATOR, KANSAS CORPORATION COMMISSION

Mr. Chairman, I am William R. Bryson, Interagency Coordinator for Federal Programs of the Kansas Corporation Commission. I am here today representing all States who have received primacy from the Environmental Protection Agency to administer Federal Underground Injection Control programs. I wish to bring to the attention of the Committee the concerns of my colleagues in those states.

There is a crisis developing in the EPA's Underground Injection Control State Grants program. The EPA has proposed that funding be reduced from the $11.5 million provided by the Congress in FY 88 down to $9.5 million for FY 89. This program was already seriously underfunded. Now, EPA's action threatens to undo the cooperative Federal/State partnership that oversees permitting and monitoring of over a third of a million underground injection wells in every region of the United States. To continue their highly successful effort of helping to protect America's groundwater resources, States require a minimum funding level of $14.5 million in FY 89.

Correctly permitted and carefully monitored injection wells are an essential and safe operational part of the oil, chemical, mining, and manufacturing industries of the United States. But improperly sited and operated injection wells could potentially contaminate adjacent groundwater resources.

States have long recognized this fact and have operated their own oversight programs. For example, States such as Kansas, Texas, and Oklahoma have been regulating injection wells for over 40 years.

Over the years, the injection well issue has become increasingly complex. This is due to several factors. First, injection wells are an integral part of our domestic energy producing industry. As our oil and gas reserves are depleted, injection wells are used to maintain and extend production in these fields. This trend will continue to be a critical part of our domestic oil and gas recovery process and has necessitated a dramatic increase in the number of injection wells.

The orders of magnitude for fluids which are being injected by salt water disposal wells as a by-product of domestic oil and gas production is astounding. In 1987 this volume far exceeded 15 billion barrels (1 barrel=42 gallons) of injected fluids.

Another example of this growing concern has been the implementation of stringent new federal and state grant contingent guidances as a precursor for the regulations associated with the permitting and operation of injection wells. From the start, Congress recognized that the oil and gas producing States had the years of field experience needed to enforce Federal UIC regulations. Section 1425 of the Safe Drinking Water Act encouraged the States to seek primacy to enforce federal UIC regulations through a 75/25% federal/state matching grant program. This allowed States to provide local enforcement of Federal regulations while it allowed the Federal government to extend its oversight effectively into an area where it plainly lacked the personnel and funding to do so on its own.

At the beginning of my testimony, I mentioned the threatening financial crisis in the funding of this absolutely vital environmental program. This crisis can be described under three basic headings. First, the number of injection wells under State jurisdiction is increasing. This is made particularly acute by the growing inventory of wells created by the downturn in the oil industry. It is further exacerbated by the vast number of active and abandoned Class V wells which range from family septic systems to service station drainage wells and may almost double our on-site inspection responsibilities.

Second, is the increasing number and complexity of regulations and reporting requirements brought about by legislation such as the Safe Drinking Water Act. It seems very likely that the Congress will continue to enact additional groundwater protection legislation. Evidence of this can be seen in the overwhelming support of HR 791, the Groundwater Protection Act of 1987, by the House this past December. Subsequently, the regulatory and reporting responsibilities required of UIC programs is increasing, and will continue to do so in the future.

Third and last, we are facing a severe budget crisis in almost all of our State UIC programs. It has been increasingly common for States to assume more than their 25% required matching share of UIC State Grants in order to cover any short-fall in Federal funding. The result is that States such as Texas are paying up to 55% of this Federally mandated program although they are required to cover only 25% under Federal law.

I must tell you categorically that this situation is no longer tenable. In a recent meeting with the UIC Directors of the 10 largest State UIC programs, I was told by each that because of budgetary constraints they would no longer be able to pay more than their 25% State share. To be blunt, these States are unable to continue to subsidize implementation of the Federal UIC program.

Despite the financial crisis I have just described, the Environmental Protection Agency has requested that EPA UIC State Grant Funding be reduced from the $11.5 million you approved in FY 88 to $9.5 million in FY 89. In so doing, they have refused to recognize the $2 million increase provided by this Committee for FY 88.

Such a cut would mean a reduction of 30% in Federal funding for our Kansas UIC program. Similarly, the State of Texas would be cut by 44%, the State of Louisiana by 23%, the State of California by 25%, and the State of West Virginia by almost 20%. My fellow State UIC program directors agree: the States cannot continue to operate an expanding program of enforcing Federal regulations for the Federal government with a program level of even $11.5 million.

After consultation with my colleagues, we believe that a minimum of $14.5 million is essential if States are to continue to administer this program for the Environmental Protection Agency.

At the proposed funding level of $9.5 million, the States will be forced to renegotiate their enforcement responsibilities with the Environmental Protection Agency. The EPA, under its responsibility to oversee the Safe Drinking Water Act, should be insisting upon an increased level of State field inspections and rigorous enforcement of UIC regulations. But this cannot and will not happen at a funding level of $9.5 million.

The results are certain. First, there will be a long series of bitter recriminations between States and national and regional EPA offices with serious repercussions and a potential hiatus in the enforcement of UIC regulations. States would have to consider their option of giving the UIC program back to EPA which would then run it out of its regional offices.

But the cold fact is that EPA lacks the personnel, the funding, and the expertise in regional offices, to effectively administer State UIC programs. There are literally thousands of persons employed by the States in order to carry out this Federal program. Add the buildings, equipment, field offices, vehicles etc., and you can see that the EPA's start-up costs would be staggering.

The one certain and immediate result would be that State groundwater protection efforts would decrease at the very time that public and Congressional concern is increasing. We know that this is not the intent of the Congress.

The States problem is that the EPA UIC State Grants Program has suffered from serious shortfalls in funding over the past few years. For example, over $33 million is provided every year for states to enforce federal drinking water regulations in the nation's 60,000 water utilities. Over $50 million is provided to oversee a few thousand RCRA sites. Contrast this with a proposed $9.5 million to oversee over 330,000 injection wells across the country. If we included the Class V wells I mentioned, some EPA inventory estimates exceed one million wells nationally!

With a funding level of $14.5 million in FY 89, States can meet their minimum obligations to the Environmental Protection Agency. A lesser figure will force the States to re-negotiate their regulatory and reporting responsibilities with the EPA.

For an example of what can happen when preventative steps are not taken to protect the environment, we ask you to consider a section of the FY 89 Defense Authorization Bill that was recently adopted by the House Armed Services Committee. In its report, the Committee noted that over 5,000 sites involving damage to the environment have been identified at 739 military installations around the country. Many of these instances involve severe groundwater contamination. Incredibly, the Department of Defense estimates that it may take up to $20 billion to clean up these sites over the next few years. DOE estimates for environmental restoration on military bases run as high as $100 billion.

If lack of environmental management at 739 military installations can cause $20 to $100 billion in environmental damage, then consider the impact of a third of a million improperly permitted and monitored injection wells on our groundwater resources.

We have also heard the numerous forecasts of a coming recession. States know that compliance with costly and complex environmental procedures has to be enforced with particular vigor during times when American business is under severe economic pressure.

Injection wells, as defined by the Safe Drinking Water Act and Amendments, include any hole in the ground that is deeper than it is wide. All of us here today either own or know someone who depends upon an injection well.

Of all the 330,000 wells in the EPA national inventory, only 200 are actually injecting hazardous waste as legally defined. The vast majority of all injection wells are owned or operated by small businesses or mom and pop type entrepreneurs. These are the people who are now, and will be additionally regulated by new groundwater legislation.

When new programs come on-line, as we predict they will, the cost of enforcement will double or triple again and far exceed the originally authorized $19.5 million dollars approved by Congress when this program began. Yet the current recommendation is for a $9.5 million dollar program. The Federal desire for strict enforcement of UIC regulations will be only wishful thinking if it doesn't help pay its agreed-to share.

The States, the enforcement arm of the Congress in this program, ask you to consider what a $5 million Congressional add-on buys in terms of Federal/State cooperation and groundwater protection. You are supporting a program that demonstrably works and is preventing many billions of dollars in environmental clean-up costs.

In striking contrast to the groundwater contamination found on some military bases is this simple fact: Of the more than a third of a million injection wells across the country, only one single well in the State of Pennsylvania, has ever become a Superfund site. Conversely, consider the potential environmental damage of improper monitoring and regulation of over 330,000 injection wells.

I hope that you will agree that a Federal/State cost-sharing partnership that:

--spends a very few million dollars and yet saves billions in environmental clean-ups

--is responsive to public concerns for groundwater protection

--facilitates the operation of our petroleum, chemical, mining, small business, and farming enterprises

deserves adequate funding.

A minimum of $14.5 million is required to fund this program under the current level of required commitment from the EPA. A cut from the $11.5 million in FY 88 to the EPA requested $9.5 million in FY 89 is a prescription for disaster which we respectfully request that you prevent from happening. States stand ready to pay their full 25% required matching share and to continue to administer what is one of the quietest but also one of the most effective environmental protection programs in the world.

Over the past two years, this Committee has been very generous in helping to increase EPA UIC State Grant Funding from $9.5 million to $11.5 million. We ask for your continued help to achieve the necessary minimum level of funding of $14.5 million which will guarantee the continued success of this important program under the current regulations.

GLOBAL WARNING AND STRATOSPHERIC OZONE DEPLETION

Senator GARN. We will now hear from a panel of witnesses on global warming and stratospheric ozone depletion. Would Dr. William Moomaw, Mr. Joseph Goffman, Mr. Peter Myers, and Mr. Gordon J. MacDonald please come to the witness table.

Dr. Moomaw is from the World Researches Institute; Mr. Goffman represents the Environmental Defense Fund; Mr. Myers is from the National Audubon Society; and Mr. MacDonald is from the Mitre Corp.

I understand you are a prearranged panel, so if you will go ahead in whichever order you would like to start.

NATIONAL SCIENCE FOUNDATION/NATIONAL AERONAUTICS AND SPACE ADMINISTRATION/ENVIRONMENTAL PROTECTION AGENCY

STATEMENT OF GORDON J. MACDONALD, VICE PRESIDENT AND CHIEF SCIENTIST, MITRE CORP.

QUESTIONS OF PRIORITIES IN CLIMATE ISSUE

Mr. MACDONALD. Thank you, Mr. Chairman. I am Gordon MacDonald. I am an individual scientist who has worked on problems of climate and climate change over the past 25 years. I believe the climate issue forcefully raises questions of priorities in the research programs funded by NASA, NSF, and EPA, whose budgets are the responsibility of this subcommittee.

Changes in climate in magnitude, anticipated by scientists the world over, have the potential to alter the underlying structure of our society in a major way.

Despite long-term significance of progressive global warming, major questions with regard to the nature of climate change, the effects of climate change, of warming, and how policy should evolve in response have either been ignored or given low priority by the responsible agencies.

Over the last 10 years, there have been four major developments in understanding climate. Three of those have come out of research funded through appropriations monitored by this committee. First, we have seen the composition of the atmosphere change in a dramatic way through the work of David Keylee at Scripps Institution; work funded by NSF, in part, also by NOAA and DOE.

The significance of that change has been studied through detailed computer modeling carried out both at the National Center for Atmospheric Research and the Goddard Institute for Space Sciences.

A third advance has been the recognition that in addition to carbon dioxide, the principle greenhouse gas, other gases, such as methane, compounds of nitrogen, the chlorofluorocarbons all contribute to the warming. This research has been carried out largely by individual scientists scattered around the country working through National Science Foundation grants.

Finally, the tie of the changing atmospheric composition to the changes that took place during the last glacial ocean has resulted from a major investigation carried out by the French and Soviet analysis of ice cores from Antarctica.

GAPS IN OUR UNDERSTANDING OF CLIMATE

As we look to the future, though, there are clearly major gaps in our understanding of climate, gaps that we will have to remedy if we are going to adjust and anticipate the warming of the future.

First, we understand slow changes in climate. We have very little idea as to what the statistics of climate will be in a new regime. Will storms be more frequent? Will droughts and prolonged cold spells be more frequent? How will the extremes that really determine the economic consequences of much of climate, how will they alter?

Research along these lines is clearly the kind of investigation that can be taken on by the Goddard Institute for Space Science, a NASA-funded activity, and the National Center for Atmospheric Research.

A second priority on my list would be much clearer investigations to give us a much clearer understanding of how the distribution of vegetation, the response of plants to climate, change. These kinds of investigations are the kinds that the National Science Foundation should appropriately fund and support.

Finally, there is the whole question of the policy alternatives. As we move into these new regimes, policy analysis and the whole field of climate change is in its infancy, partly because there is no natural agency that should have responsibility or does have responsibility. I would suggest that the Environmental Protection Agency, as well as the National Science Foundation, are clear places where this kind of research could and should be funded. Thank you. Senator Garn. Thank you.

[The statement follows:]

STATEMENT OF GORDON J. MACDONALD, VICE PRESIDENT AND CHIEF SCIENTIST, MITRE CORP.

The climate change issue forcefully raises the question of priorities in the research programs funded by NASA, NSF and EPA, whose budgets are the responsibility of this Subcommittee. The research priorities of NOAA, the Department of Energy and other agencies, all of whom will be touched by climate change, should also be examined. Changes in climate of the magnitude anticipated by scientists the world over have the potential to alter the underlying structure of our society in a major way. Despite the long-term significance of progressive global warming, major questions with regard to the nature of climate change, the effects of warming, and how policy should evolve in response to climate change have either been ignored or given low priority by responsible agencies. NASA continues work on the National Aerospace Plane, an object whose mission is yet to be defined, and on the controversial Space Station; NSF joins in the chorus of support for the Superconducting Super Collider, to be funded by DOE; and EPA alleges that NOAA and DOE have responsibility for the climate program. Instead of a steady program aimed at deriving answers to major questions about the future of our society, agencies continue to promote the parochial interests of their immediate constituencies.

The issue before this Subcommittee is one of priorities: The question is whether or not programs related to climate change are receiving the priority indicated by policy considerations. In attempting to provide guidance on this question, I will outline the changes that can be anticipated from the greenhouse effect and describe the advances that recently have been made in understanding future climate change. I will then comment on a selected number of research priorities.

Given the limited funding for the analysis of the social and economic consequences of climate change, it is not possible to project in detail what might happen if current concerns of scientists prove to be real. However, there is general agreement that the warmer future will include the following:

(1) Sea level will rise because warmer water expands, but also because glacial ice will melt. A sea level rise of a few feet, possible in fifty years, would drastically affect Florida, Louisiana, and other low-lying areas of the U.S., as well as densely populated areas in Bangladesh and the Netherlands. The adverse effects of sea level rise will be intensified if the frequency of heavy storms, such as hurricanes, increases as anticipated. In response to these changes, residents of low-lying coastal areas may turn to FEMA and HUD for assistance in flood damage and to the Corps of Engineers for flood protection. Alternatively, coastal flooding may lead to a massive relocation of populations, with unknown economic and social costs.

(2) Summers in mid-continental regions will become hotter and drier. Farmers in Illinois and Iowa raising corn are going to experience more frequent crop failure due to both drought and heat damage. The agricultural community can be expected to respond by seeking ever-larger government subsidies and protection against defaulted loans. Agricultural production cannot simply move toward the poles as summers get hotter and drier in the mid-latitudes. Ancient glaciation has removed the soil required to maintain productive agronomy in the poleward regions. If increased winter precipitation were

to accompany the summer dryness in existing agricultural regions, there would be demands for new dams and irrigation canals to maintain agricultural productivity.

(3) Present dams and canals will become less efficient as patterns of precipitation change. Water resource projects have been constructed on the basis of long-term experience--usually one hundred years. Shifts in climate will reduce the usefulness of existing structures, requiring massive new expenditures over a much shorter time period than that required to construct the present system.

(4) The current distribution of population is, in part, a consequence of historical climate, which has determined agriculturally productive areas, regions with sufficient water supply, and areas of equitable temperature and humidity. Climate change can be expected to induce migration within the United States and across our national boundaries. Both legal and illegal migration could pose severe social and economic hardships that the government will be expected to handle.

(5) The natural, "less managed" areas including forests, grasslands, and marshes evolved over a time scale of centuries in response to post-glacial warming. Much more rapid change, with time scales of decades, will have devastating consequences to natural ecological systems, including wildlife. These areas provide recreational facilities for millions, as well as furnishing the setting for hunters and fishermen; their destruction will cause widespread concern.

Because climate is such a pervasive determinant in our society, the impacts of a rapidly changing climate constitute a much longer list than I have given. These manifold effects can be better dealt with if we develop a deep understanding of the underlying science and apply that understanding to the development of mitigation programs. In fact, slow progress has been made in understanding climate change.

During the past three decades, four significant scientific advances have established climate change as a major policy issue for the next decade. We now know that climate is changing in response to the burning of fossil fuels and to a myriad of industrial and agricultural activities. These changes have the potential to endanger the infrastructure developed during decades of unchanging climate. Climate changes have, so far, been noticeable only to scientists analyzing past temperature records. Climate change will become noticeable to all in the coming decades unless actions are taken to alter energy and industrial policies.

The first advance in the examination of climate has been the recording of increased levels of carbon dioxide in the atmosphere. Working out of the Scripps Institution of Oceanography, David Keeling has recorded changes in atmospheric carbon dioxide content over the past thirty years. Without his meticulous observations, carried out alone or with one or two graduate students, we would be without the basic data essential to any consideration of climate change. Despite the historical significance of this work, Keeling has had to struggle over the years to obtain support from the National Science Foundation, the National Oceanic and Atmospheric Administration and the Department of Energy. Baseline observations, particularly those carried out over decades, are not generally viewed with favor, either by funding agencies or reviewing scientists. There is a need to develop mechanisms that will ensure the continuation of these measurements in the coming decade. The collection of similar baseline observations on other key gases, including methane and oxygen, should also be ensured.

The derivation of the consequences of changing atmospheric composition from observational data is the second major advance and requires the construction of elaborate numerical models of climate. In the United States, three groups have played key roles: the National Center for Atmospheric Research, sponsored by the National Science Foundation; the Goddard Institute of Space Science, funded by NASA; and the Geophysical Fluid Dynamics Laboratory at Princeton, supported by NOAA. These efforts involve major facilities equipped with supercomputers and teams of research scientists. Current computer models fall far short of supplying the detailed predictions that would be required to assess regional impacts of climate change. Continued and increased support of these facilities will be needed if a predictive capability is to be developed.

The recognition that carbon dioxide is not the only greenhouse gas is the third significant advancement in climate research. Discoveries of the past decade show that other man-made gases, taken together, will produce a warming effect equal to that of carbon dioxide. Our present understanding of the effects of trace and man-made gases has come largely as a result of individual efforts carried out at numerous institutions. The principal support for these studies has come from NSF, but NASA has also been a significant contributor.

The fourth major advance is our increased knowledge of ancient climates. New evidence shows that during the last glaciation, some ten thousand years ago and earlier, the concentration of atmospheric carbon dioxide was one-third less than it was one hundred years ago. The discovery that the retreat of the glaciers was accompanied by an increase in carbon dioxide establishes a clear, observed link between atmospheric carbon dioxide and global climate. These observations of ancient atmospheric composition are based on measurements of air trapped in ice. The ice samples were obtained by the Soviet Union, which has drilled a two-kilometer-deep hole in the Antarctic ice sheet at Vostok, reaching ice 160,000 years old. Chemical analysis of the gases trapped in the Vostok ice was carried out by a team of French scientists. Their observations, together with future projections, show that within about fifty years from now, man will have altered atmospheric composition to a degree that is comparable to the change that occurred during the transition from glacial cold to the temperate climate of the past two thousand years.

As I have outlined, significant progress has been made in understanding both the physical basis of climate change, and the ways that energy, industry and agricultural activities alter the composition of the earth's atmosphere. However, our understanding of the consequences of climate change to agriculture, water resource management, fisheries, forests and wildlife is primitive. Research on the impacts of climate change will require the efforts of individual scientists or small groups of scientists at a large number of institutions. This type of research would normally be the primary responsibility of the National Science Foundation; however, NSF has accorded priority not to the effects of climate change, but to the numerical modeling of climate. In the future, a far greater research effort on climate change effects will be required.

Three of the four significant advances in understanding climate change have come largely as a result of research sponsored by agencies for which this Subcommittee has appropriation authority. Because of the diffusion of responsibility for funding climate research over several federal agencies, there is no separate break out of these activities. For the most part, climate research has been carried out by individual scientists or small groups, yet its importance to the development of future national and international energy and industrial policy cannot be underestimated. The policy leverage of research into climate change, a phenomenon that could alter our society's fundamental structure, is very great when compared with that of such vast undertakings as the National Aerospace Plane, the Space Station or the Superconducting Super Collider.

I now turn to three priority examples of research needed to improve our scientific understanding of climate change and its effects, and of the policy mechanisms needed for dealing with climate change.

Computer models of climate have necessarily focused on the equilibrium or steady-state response of the atmosphere and oceans to changing atmospheric composition. Much less effort has been given to exploring the statistical behavior of the atmosphere in a new climatic regime. Extremes of temperature, precipitation and storminess are the principal determinants of the economic consequences of climate change. Yet we do not know whether a rise in average temperature increases or diminishes the magnitude of local extremes. I believe that a combination of computer modeling of the sort carried out by NCAR and the Goddard Institute of Space Science (GISS), together with theoretical analysis of the underlying dynamics, can provide data with which to address this critical question. Research into regional effects will require additional support for NCAR through NSF, and for GISS through NASA.

Another priority area of effects research should be the impact of climate on the geographical distribution of plants. A cursory glance at vegetation and climatic maps of the world impresses one by the close correspondence of the two distributions. Indeed, the classification of vegetation zones as boreal, temperate and rain forest embodies a climatic connotation. However, the mechanisms which connect climate and vegetation, whether natural or managed, are poorly understood. This branch of botany has long been a neglected area of science, neither fashionable nor funded. The National Science Foundation should take the lead in supporting research into the climate-plant connection. By its nature, this type of research activity will be largely carried out by individual scientists working at a variety of institutions. NASA can also contribute by providing LANDSAT data.

The third area of needed research, policy analysis of climate change, is truly in its infancy. Small, beginning efforts are underway at a number of institutions such as Resources for the Future and the University of Minnesota, but in fact, the research community has not been engaged. In part, this gap exists because of the lack of clear responsibility for funding policy research. The Department of Energy has lead responsibility for carbon dioxide research but has eschewed the funding of policy analysis. EPA and NSF are the logical agencies to support policy research on climate change, but such support is certain to be controversial. Today, the key policy question is what internationally acceptable measures can be taken that will slow the rate of change of climate.

Climate change is an inadvertent consequence of industrial society. The scope of human activities flowing from a large population, modern technology, and an immense volume of economic activity has made some climate change inevitable. If the cost of global alterations to society is to be lessened, we need to understand the mechanisms of climate change, its effects, and the means to deal with those effects. As you address this year's budget, I hope you will recognize that climate research is essential to the development of wise policies for the future.

STATEMENT OF DR. WILLIAM MOOMAW, DIRECTOR, CLIMATE AND ENERGY POLLUTION PROGRAM, WORLD RESOURCES INSTITUTE

Dr. MOOMAW. I am Dr. William Moomaw, director of the Climate and Energy Pollution Program to the World Resources Institute. I want to thank you, Mr. Chairman, for the opportunity to testify. I am here to urge the subcommittee to raise the priority of two problems which threaten the well being of the planet; namely, the greenhouse effect, or global warming, and the stratospheric ozone depletion.

As Dr. MacDonald has just indicated, these are critical issues that have been the subject of study and support by some of the agencies that are under the jurisdiction of this appropriations subcommittee.

GREENHOUSE EFFECT

I think it is critical that we recognize that we are going to have to commit ourselves to a long-term research program that rivals the 30-year or so program of a very modest sort that has brought us the dramatic data showing the inexorable rise of carbon dioxide over the last three decades.

We really need to be able to do the kind of research that will allow us to discover the greenhouse fingerprint; that is, the definite indication that the global warming is with us as soon as possible, and that is going to take some additional research.

We also need to understand the complex interactions among the atmosphere, the oceans, and the biosphere if we are going to be able to do a decent job of predicting just what the consequences of our current activities are and what would be the consequences of various policies we might implement.

If I may echo Dr. MacDonald, we find that we need to deal with policy research to find out, to set priorities, and determine which policy responses will have the least disruptive impact on society and the economy as we attempt to offset the potentially devastating consequences that these atmospheric changes may bring.

There are three agencies that I wish to comment specifically on and their programs. The first is the Environmental Protection Agency, which, it seems to me, is the logical agency to take on the policy research.

The Congress has asked the Environmental Protection Agency, among other things, to prepare an integrated national climate protection program. They also should be evaluating policy options, which they are doing a little bit of work on, and also some adaptive strategies.

We are all familiar with the problems that we have with even very relatively small-scale regional fluctuations, such as the rising level of the Great Lakes and of the Great Salt Lake and the tremendous burden that has placed on local communities. When we think of global warming and its consequences for sea level rise, not just in the United States, but over the whole globe, it is just staggering to think about how we might respond to that.

We need to begin anticipating ways in which we will have to deal with some of the warming that we are probably already committed to, as well as some of the ways in which we can prevent future warming to cause problems.

BETTER DATA BASE

We need a better data base. I would like to suggest that in order for EPA to accomplish that, the $2.1 million I believe in some of the fiscal year 1989 budget now is totally inadequate. There is a need for a much larger amount, perhaps for each of these areas, something on the order of $10 million for a total of $40 million in FY 89 could well be spent in order to meet the mandate of Congress and also to gather the information that is needed.

STRATOSPHERIC OZONE PROTECTION

Also, in the area of the stratospheric ozone protection, EPA has currently budgeted about $3 million to implement the Montreal Protocol. In fact, the research that was done by NASA and reported by the NASA Trends Panel as well as some NSF research makes it very clear that the stratospheric ozone depletion over Antarctica, in which the ozone layer has collapsed to less than 50 percent of its amount every spring, this last spring, which, in Antarctica is in September and October, and even for us more disturbing consequences of significant ozone decline over northern latitudes means that the protocol is going to have to be renegotiated, and we will probably have to phase out chlorofluorocarbons much more rapidly.

I would just like to remind the members of the subcommittee that even some of the major producers like DuPont have agreed to phase these chlorofluorocarbons out as soon as it is technically feasible.

Also, I feel that there is a need to add about $40 million to the NSF budget to its programs and $50 million to NASA. I realize that the committee is faced with the problem of: Where does this money come from?

Let me just close by making a couple of observations. One is that projects like the hypersonic aircraft or even the space station, which the space station, in particular, could be quite useful in our gaining new understanding of this program, but the increases in just those two programs alone exceeds all of the amount of money that I am talking about that we need for these particular programs.

I would agree with Senator Gramm that we must look toward future needs, and there is probably no future need that is greater than protecting ourselves from the potentially devastating ozone depletion and climate change. NASA, NSF, and EPA can all play an important role in that, but it will require the reallocation of funds from other programs.

Senator GARN. Thank you. I would just make a comment. I have had given speeches on ozone depletion, so I am not in disagreement with you at all. But rather than suggesting that we start carving up this whole science area, that is not the problem that this overall budget is being robbed from. It is a lot of other things in the overall budget.

Please go ahead.

STATEMENT OF JOHN PETERSON MEYERS, NATIONAL AUDUBON SOCIETY

Mr. MEYERS. Thank you, Mr. Chairman. My name is John Peterson Meyers, and I appear before you today as a practicing ecological scientist and as senior vice president for science and sanctuaries of the National Audubon Society.

National Audubon welcomes this opportunity to comment on proposed appropriations for 1989 that will affect the nation's scientific endeavor. We are deeply concerned that this investment in the future give high priority to two of the issues we have been discussing in the last few minutes; that is, global climate disruption and destruction of the stratospheric ozone layer.

These two issues challenge our scientific abilities, our policymaking skills, and ultimately, our political will at a scale of unprecedented magnitude.

TRANSITION TO GREENHOUSE WORLD TRAUMATIC

A greenhouse world will be unlike the one with which we now are blessed. The transition to that greenhouse world will be traumatic. It will strain our society's ability to adapt and will stress the natural bioduct severely. True, the climate has changed before, but to the best of our scientific knowledge, it has never changed at a tempo comparable to what we now face.

Moreover, it is sending other simultaneous pressures weighed on the world's social and biotic systems. Audubon therefore urges this committee to take supportive action on NASA's, EPA's and NSF's budgets with respect to appropriations that can affect programs in this area.

We need to advance our scientific understanding of the events themselves; identify ways to avoid their impact, and minimize their effects.

For these efforts to be successful, Congress must provide the scientific establishment with sufficient financial resources to address climatic disruption and ozone depletion foresquare.

The basic science, as you have been hearing this morning, the basic science of the greenhouse is stark and it is convincing. It is built on a fundamental change in humanity's relationship with this planet. Because of the scale at which we use energy, particularly fossil fuels, we are now major players in setting the composition of the Earth' s atmosphere.

WARMING TREND PREDICTED

It is going to get warmer over this next 30 years. By 1985, we had already changed the atmosphere enough to guarantee a 1.5 to 2 degrees centigrade increase. That may seem piddly, but, in fact, over the long term, we may be headed. over the next few thousand years, toward an ice age. But that may take 1,000 years or more. The increase we are facing now is occurring now and rapidly.

Temperature changes related to major shifts in and out of ice ages take place on orders of 1 or 2 degrees centigrade per 1,000 year. The greenhouse changes will occur at rates that approach 1 degree per decade. That is 100 times more rapid.

The greenhouse will have had its way with our economies, our lands, and our children long before the next ice age cools things down. The problems wrought by climate disruption will pervade the Earth. National Audubon's particular mission is to protect wildlife, wildlife habitat, and the environment upon which we, as humans, along with all other life forms, depend.

We thus look ahead with special dismay at the greenhouse's impact on our natural world. We may witness, within our lifetimes, one of the largest waves of biotic impoverishment ever experienced on our planet.

ENVIRONMENT AT RISK

National Audubon looks at a greenhouse feature in which many of the hard-won environmental successes stand at risk. How, for example, do you develop a system of national wildlife refuges if the climatic zones for different species don't stand still?

How do you assist species to shift their distributions across a landscape that has been littered with human-made obstacles?

In summary, climate disruption demands our highest priority, substantial and long-term commitments, and interdisciplinary coordination. It won't yield to anything less. Last year, Congress wisely asked the president and the Cabinet to create a national policy for climate change.

Now Congress and this subcommittee must ensure that the scientific bases for this national policy exist. Your decisions on appropriations for our major scientific agencies will have an immediate and material impact on this critical endeavor. Thank you.

[The statement follows:]

STATEMENT OF JOHN P. MYERS, SENIOR VICE PRESIDENT FOR SCIENCE AND SANCTUARIES, NATIONAL AUDUBON SOCIETY

Thank you for this opportunity. My name is John Peterson Myers and I appear before you today as a practicing scientist and as Senior Vice President for Science and Sanctuaries of the National Audubon Society. National Audubon welcomes this opportunity to comment on proposed appropriations for 1989 that will affect the nation's scientific endeavor.

Audubon represents a nationwide network of 510 chapters and over 500,000 members in a collective effort to protect and enhance wildlife, wildlife habitat, and the environment. We are deeply concerned that this investment in the future— for that is what scientific investigation represents— give high priority to two of the most important issues our world must confront: **global climate disruption** due to the greenhouse effect and **destruction of the stratospheric ozone layer**.

These two issues challenge our scientific abilities, our policy-making skills, and ultimately our political will at a scale of unprecedented magnitude. A greenhouse world will be unlike the one with which we now are blessed. Little will remain unchanged— warmer here, dryer there. The seas will rise, in fact they are rising now. Coastlines will retract. **The transition to the greenhouse world will be traumatic.** It will strain our society's ability to adapt and will stress the natural biota severely. True, the climate has changed before. But to the best of our scientific knowledge, it has never changed at a tempo comparable to what we now face nor when so many other simultaneous pressures weigh on the world's social and biotic systems.

Audubon therefore urges Congress to take immediate action. We must advance our scientific understanding of the events themselves, identify ways to avoid their impact, and minimize their effects. For these efforts to be successful, Congress must provide the scientific establishment with sufficient financial resources to address climate disruption and ozone depletion foursquare.

The basic science of the greenhouse is stark and convincing. It is built on a fundamental change in humanity's relationship with its planet. Because of the scale at which humans use energy, particularly fossil fuels, we— people— are now a major player in setting the composition of the earth's atmosphere.

This did not used to be. But since the beginning of the industrial revolution we have been pumping carbon dioxide into the environment at ever increasing rates, to the point that CO_2 levels are now 16% above where they were in 1850, world-wide. Other gases have also increased dramatically, some that never even existed before the beginning of this century. Our gaseous wastes are now so abundant that they change the physical balance setting the earth's temperature. Carbon dioxide, methane, chloroflourocarbons, and other greenhouse gases are simply more efficient at trapping heat leaving the earth than at preventing it from reaching us from the sun in the first place. **This is the greenhouse effect and it yields a fundamental imbalance that will heat the earth and produce pervasive climate disruption.**

The earth will get warmer over the next 30 years, dramatically so. By 1985 we had already changed the atmosphere enough to guarantee a 1.5° to 2° C increase. That increase hasn't hit us yet. Its arrival is slowed by inertia in the earth's thermal dynamics. But it is coming. And if we do not slow the rate at which we pump these greenhouse gases into our environment, that will be just the beginning.

One or two degrees increase seems piddling. In fact, over the long-term we may be headed toward an ice age. But slipping into an ice-age takes thousands of years. The increase in temperature we face is occurring now and rapidly. Temperature changes related to major shifts in and out of ice ages take place at rates on the order of one degree centigrade per thousand years. The greenhouse changes will occur at rates approaching one degree per decade. That is 100 times more rapid. **The greenhouse will have had its way with our economies and our lands and our children long before the next ice age cools things down.**

The problems wrought be climate disruption will pervade the earth. National Audubon's particular mission is to protect wildlife, wildlife habitat, and the environment, upon which we as humans along with other life-forms depend. We thus look ahead with special dismay at the greenhouse's impact on our natural world. We may witness, within our lifetimes, one of the largest waves of biotic impoverishment ever experienced on our planet.

The changes in temperature and precipitation will challenge plants and animals to adapt or to move. Adaptation for the hardy may not be improbable, at least where changes are small and slow. But the climatic models tell us that here, on the face of North America, we face wrenching increases in temperature, shifts in rainfall, alterations in storm patterns, inundations in coasts— changes sufficient to challenge human economic and social systems along with many of our treasured natural resources. For the biota, moving might have been a reasonable response to the last ice age, but the changes then took place slowly and over a landscape unaltered by human activities. One key element to the greenhouse predictions is that the world-wide average increase, expected to be 1.5° to 4.5° C, in fact includes much regional variation. Higher latitudes, including our own temperate and arctic lands, will receive more of the increase, perhaps as much as 6° to 9° C in the arctic.

Three current predictions portend how severely this may play with the life-forms across North America: (1) the lob-lolly pine belt of the south-east U.S. is likely to find its climatic zone shifted 300 kilometers northward, up here toward Washington, D.C.; (2) the boreal forest in its entirety may shrink to a small remnant in NE Canada; and (3) the arctic tundra may no longer persist in its current form. Other predictions entail drier summers in the Great Plains and even greater competition for scarce water resources; increases in the frequency of red tides in coastal waters; and shifts in the distribution of trees and fish critical to forestry and fisheries, respectively.

National Audubon looks at a greenhouse future in which many of our hard-won environmental successes stand at risk, advances important to human health as well as to plants and animals. Some of the fundamental premises upon which we base our conservation effort need reassessment. How do you develop a system of wildlife refuges if the climatic zones for different species don't stand still? How do you protect coastal habitats if the land you buy today is under water tomorrow? How do you assist species to shift their distributions across a landscape littered with human-made obstacles? How do you invest in endangered species when a large fraction of the biota risks extinction? The greenhouse brings an awesome challenge to conservation science and management.

Meeting the greenhouse challenge calls for Congress to make important investments in scientific research, policy formulation, and technology development. The EPA, NASA, and NSF must immediately expand their commitments in this area. **The urgency isn't because major climate disruptions have already occurred. It is because for us to minimize their extent and limit their impacts we must act now, before the atmospheric bank of greenhouse gases gets too large.**

The 1989 proposed budget of EPA totals $4.8 billion with only $1.9 million in that allocated to climate. **EPA's investment in climate research and policy analysis should be increased to at least $40 million.** This will still represent less than one percent of the proposed EPA budget. This infusion of funding will enable EPA to begin or enhance programs in four critical climate areas, the most important of which is (1) developing policy options to stabilize atmospheric concentrations of greenhouse gases. Additionally, EPA should (2) improve its data base on the sources and sinks of greenhouse gases; (3) evaluate strategies to cope with unavoidable climate change; and (4) prepare an integrated national climate protection policy.

Much of EPA's work will necessarily focus on energy use, energy policy, and alternative energy sources. It must also confront issues related to the management of national lands and natural resources. Long-term programs monitoring greenhouse trends along with early warning systems for detecting climate disruption signals in the environment and in the biota should also be included.

NSF's budget should include a $20 million addition (total $85.3 M) **to the Biotic Systems and Resources Program and a $20 million** (total $340.9 M) **to the Global Geosciences Program for research aimed specifically at climate disruption.** While basic principles underlying the greenhouse effect are firmly understood, our ability to make predictions about the magnitude of disruption at particular sites on earth is woefully limited. We do even worse at predicting the impacts of those changes, particularly on the biotic systems upon which we, the human species, depend so intimately. Honing those predictions will require a host of long-term investigations that increase our understanding of interactions between climate and biological systems, especially the potential for feedbacks, both positive and negative.

The Committee should add $50.0 million to the NASA appropriation for the Environmental Observation Program. This addition should come in three areas:

(1) $20 million (to $52.8 M) for the atmospheric dynamics and radiation research and analysis program. This will improve NASA's ability to predict regional climate change and to detect early greenhouse signals.

(2) $10 million (to $11.2 M) for studies of methane and the role of the oceans in the global carbon cycle. This will enhance our understanding of the sources and sinks of the major greenhouse gases, helping to define our policy options.

(3) $20 million (to $54.0 M) for upper atmosphere research on the atmospheric chemical processes controlling the earth's climate system. Work here will be especially relevant to the problem of stratospheric ozone depletion.

Lastly, if the Committee appropriates significant funds to establish science and technology centers, one of these centers should focus on climate disruption issues.

In summary, climate disruption demands our highest priority, substantial and long-term commitments, and interdisciplinary coordination. It will not yield to anything less. Last year Congress wisely asked the President and Cabinet to create a national policy for climate change. Now Congress must ensure that the scientific bases for this national policy exist. Your decisions on appropriations for our major scientific agencies will have an immediate and material impact on this critical endeavor.

STATEMENT OF JOSEPH GOFFMAN, STAFF ATTORNEY, ENVIRONMENTAL DEFENSE FUND

Senator GARN. Mr. Goffman?

Mr. GOFFMAN. Thank you, Mr. Chairman. My name is Joseph Goffman, and I am an attorney on the staff of the Environmental Defense Fund. I work closely with my senior EDF colleague, Dr. Michael Oppenheimer, a distinguished atmospheric physicist and an expert on the greenhouse effect and its impacts.

Obviously, there is no need for me to do anything but second as vigorously as I can the statements of Dr. Moomaw, MacDonald, and Meyers. In October 1985, a conference of the world's leading atmospheric scientists, sponsored by the United Nations Environmental Program and other international sciences organizations, concluded, and I am quoting from their report:

> As a result of the increasing concentrations of greenhouse gases, it is now believed that in the first half of the next century, a rise in global mean temperature could occur which is greater than any in man' s history.

REORDERING OF PRIORITIES URGED

What we are asking this subcommittee to do today is to begin the radical shift in the scientific, technological, and policy priorities needed to understand, control, and cope with the greenhouse effect and global climate change. A radical reordering of our priorities is needed because the task is monumental.

But the first steps, at least, in this reordering, are quite modest. We are simply asking that a shift of less than 1 percent of the budgets of the EPA, NASA, and NSF be made in order to increase the funding of those programs that provide the scientific research and policy analysis needed to deal with the greenhouse effect.

The EPA must begin now to develop data bases and analytic techniques for quantifying greenhouse gas emissions and must also begin to identify the policies available for controlling those emissions and adapting to the warming to which the climate system is already committed as a result of current greenhouse emissions.

NASA, with its vast technologies and scientific know-how, must expand and focus its ongoing work in observing the most important planet of all, the Earth, to help us understand the oceanic and atmospheric mechanisms through which the greenhouse effect and climate change operate.

RACE TO SAVE GLOBAL ENVIRONMENT

We are literally in a race. Our understanding, our technologies, and our policies must outpace the drastic and potentially cataclysmic impacts of the greenhouse effect.

Let me leave you with a reminder of what happens when we get off to a slow start in a race to save a global environment. Just last month, the ozone trends panel convened by NASA reported unpredictably large decreases in global stratospheric ozone.

This may well mean that we lost the first heat of a race we might have won. Back in 1974, Dr. Sherwood Roland and others demonstrated that manmade gases known as chlorofluorocarbons had the potential to consume stratospheric ozone, but we lagged in our response to that shot from the starter's gun.

For 10 years, after Dr. Roland's findings, satellite data revealed a hole in the stratospheric ozone that appeared every spring over Antarctica, but for that 10 years, not a single scientist actually perceived or saw the hole that the data was revealing. Thus, all of our recent scientific and policy efforts to protect the ozone were delayed for a 10-year period, resulting in unnecessarily prolonged scientific ignorance and unnecessarily prolonged buildup of CFC's during that 10-year period.

In the race against the greenhouse effect, we cannot allow ourselves to get any further behind. We must make the commitment of our scientific and policy resources now or there just may not be a later. Thank you very much.

[The statement follows:]

STATEMENT OF JOSEPH GOFFMAN, STAFF ATTORNEY, ENVIRONMENTAL DEFENSE FUND

SUMMARY OF REQUEST

EPA

1. Increase by $40.00 million (to $42.1 million) the abatement and control account for global climate protection, in part to implement the Global Climate Protect Act of 1987.

2. Increase by $10.0 million (to $13.0 million) the abatement and control account for protection of the stratospheric ozone layer to implement requirements of the Clean Air and to participate in future negotiations planned under the Montreal Protocol on Substances that Deplete the Ozone layer.

NASA

1. Add $50.0 million to the Earth Sciences and Applications division: $20.0 million for atmospheric dynamics and radiation research and analysis program to improve NASA's ability to predict regional climate change and to improve capability to detect early the signals of greenhouse-induced warming; $10.0 million (to $11.2 million) for interdisciplinary research and analysis for studies of methane and of the role of the oceans in the global carbon cycle; and $20.0 million (to $54.0 million) for upper atmosphere research and analysis to improve understanding of the impact of polar chemistry on stratospheric ozone and of atmospheric chemical processes controlling the earth's climate system.

NSF

1. Add $20.0 million (to $85.3 million) to the Biotic Systems and Resources Program and $20.0 million (to $340.9 million) to Global Geosciences Program to support additional research to increase understanding of the interaction and feedback between biological processes and climate and of the potential for non-linear climate change.

2. Specify that at least one of the interdisciplinary science and technology centers to be funded under a new $150.0 million appropriation focus on the greenhouse problem.

My name is Joseph Goffman. I am an attorney on the staff of the Environmental Defense Fund, a national scientific, economic and legal non-profit organization. I work closely with Dr. Michael Oppenheimer, a distinguished atmospheric physicist and the chair of EDF's Atmospheric Program, and Dr. Daniel J. Dudek, a leading economist and a senior economist at EDF. EDF helped organize, and Drs. Oppenheimer and Dudek participated in, two crucial international meetings on the subject of global climate change co-sponsored by the United Nations Environmental Programme and others. The final report of these meetings, which took place in Villach, Austria and Bellagio, Italy, will be available this spring. My remarks here are informed largely by the conclusions of the conference participants.

On behalf of the Environmental Defense Fund, I would like to thank the Subcommittee for allowing us to share our views today on the most important enivronmental issues the world has to face -- global climate change resulting from the greenhouse effect and the destruction of the stratospheric ozone layer. These phenomena could threaten the very habitability of the Earth. We may still be able to avoid disaster, however, if we increase our scientific knowledge and technological know-how and commit ourselves to making sound policies. Life-saving knowledge, technologies and policies will elude us, however, unless Congress takes immediate action to re-order radically the priorities of three federal agencies that must take the lead in these efforts: the Environmental Protection Agency, the National Aeronautics and Space Administration and the National Science Foundation. What that requires is a modest first step by this Subcommittee to ensure that the FY1989 budgets of these agencies are adequate to support research and policy analysis in these areas. Despite the monumental problems we must solve and the scope of the long-term programs needed to solve them, with as little as a one percent shift in the budget of each agency to expand those agency programs addressing these issues, we would be well on our way to making the commitments necessary to cope with the greenhouse effect and to protect the stratospheric ozone shield from further depletion.

The consensus of the international scientific community on the greenhouse effect and consequent climate change is now so strong that there is no longer any justification for delaying the actions necessary to respond. More to the point, the scientific consensus leads directly to the conclusion that we are under urgent pressure to adopt and implement policies that will slow the now-intensifying greenhouse effect and permit us to anticipate, and adapt to, the climate changes that are already inevitable.

Human activity, particularly the burning of fossil fuels and the use of certain agricultural practices and industrial processes, has increased, and continues to increase, concentrations of carbon dioxide (CO2), chlorofluorocarbons (CFC's), methane (CH4), nitrous oxide (N2O) and ground-level ozone (O3) in the atmosphere. Because of their physical properties, these gases trap radiative heat -- the heat energy emitted by the land-ocean surface after solar energy reaches it -- in the atmosphere. As these gases increase, so too does global heating. As more heat is poured into the global climate system, the system will change; eventually, the change will be radical for both the overall climate and for regional climates.

Global mean temperature is already one-half degree above the value of a century ago and there is a reasonable likelihood that this is due to the pronounced atmospheric build-up over the last century of the radiatively active gases. If actions to limit the emissions of the "greenhouse" gases are not taken and their increase continues at current rates, the world will mostly likely warm by at least another degree, if not 2 or 3 degrees, by 2025. By 2040, the world will likely be 2 degrees warmer, but could be as much as 5 degrees warmer than today.

The resulting global temperatures will exceed any in human history, and the rate at which this warming will take place could far surpass any climatic changes which have occurred in the past, certainly since the end of the last Ice Age. Percipitation and runoff patterns and storm frequency will be altered, probably radically and possibly over very short periods of time. Some scientists even argue that the basic heat circulation system of the oceans (whose most well-known manifestation is the gulf stream), which determines the current world pattern of regional climates, could be overwhelmed by exess heating, leading to drastic -- and percipitous -- shifts in weather and climate throughout the world. Taken together with sea levels that will rise at rates 5 to 10 times faster than those over the last century, this remade climate will remake the face of the earth.

Neither human societies nor nature itself can keep pace with such changes.

There can, therefore, be little doubt as to how urgent it is that we act to curb the emissions of greenhouse gases. The sense of urgency is even further intensified by the fact that the current build-up of greenhouse gases will lead to a warming delayed over a timescale of about 40 years. A degree or more of warming is already "in the bank" from gases emitted in the past and at current rates as much as two degrees warming could be built or "banked" into the system by the end of the 20th century. What's more carbon dioxide, once emitted, remains in the atmosphere for 1000 years, CFC's for 100 and nitrous oxide for several hundred. In tragic contrast, the technological, economic and social adjustments needed to control these emissions cannot be made instantaneously. In short, if we do not begin the job today of limiting greenhouse gases, we will face irreversible global warming and its unacceptable consequences. Congress has already recognized this urgency: late last year the Global Climate Protection Act, which directs the President to formulate a national climate protection policy, was enacted.

To succeed in limiting the greenhouse effect requires intensive efforts to formulate sound policy and equally intensive scientific research and technology development. The EPA, NASA and NSF must undertake expanded efforts in these areas immediately.

The EPA must begin major efforts in four areas: (1) development of improved data bases and analytical methods for identifying and quantifying greenhouse gas emissions, (2) identification and analysis of policies to stabilize concentrations of greenhouse gases, (3) identification and analysis of policies to adopt to unavoidable climate change and (4) preparation of a national climate policy based on the results of these studies and pursuant to the express mandate of the Global Climate Protection Act. These studies will have to examine energy use, efficiency and alternatives; industrial policy; and agriculture and forestry. To do so, highly sophisticated analytical methods and models will have to be developed and improved on an ongoing basis. In addition, the impacts of climate change on water resources, coastal areas, agriculture and forest ecosystems will have to be projected and monitored on a regular basis.

The President's proposed budget for EPA includes only $1.9 million in the climate protection abatement and control account, which supports policy analysis in this area. This represents far less than one-tenth of one percent of the Agency's $4.8 billion proposed budget. We respectfully submit that the FY 1989 budget allocation for EPA abatement and control work in the climate protection area be increased to $40 million -- certainly no less than $20 million. At a minimum, the Agency must advance its work on easy-to-identify-and-control sources of nitrous oxide (i.e, power plants and cars and trucks) and methane (i.e., landfills) as well as on emissions and emissions control strategies in general while beginning to design long-term studies on agriculture and forest ecosystems. Even at the $40 million level, such an allocation would be less than one percent of the proposed EPA budget.

Many uncertainties remain concerning the component mechanisms of the greenhouse effect (e.g, the role of clouds), the exact ways in which regional climates will change and the ways in which specific policies, once adopted and implemented, will alter the build-up of greenhouse gases. As policy is made, new uncertainties will inevitably arise and will have to be resolved in order to permit further policy development. The Earth Observation programs of NASA, particularly those included in NASA's Earth Science and Applications Division, and the Biosciences and Global Geosciences programs of NSF are indispensable to any effort to understand all the constituents of the greenhouse warming and the attendant climate change. Further laboratory and field research and planetary observation and measurements must be done in the following areas: (1) ocean heat circulation patterns, (2) ocean-atmosphere heat exchange and ocean heat storage, (3) regional climate change forecasting, (4) early detection of greenhouse-induced global warming, (5) carbon dioxide source/sink function of ocean, (6) global hydrology cycle, (7) cloud formation and role in radiative heat retention and solar radiation blocking, (8) feedbacks between atmosphere and ecosystems, (9) methane storage and release in Arctic tundra and (10) tropospheric chemistry of greenhouse gases.

We respectfully submit that the budgets of NASA's Earth Observing progams be increased by $50 million over the levels proposed in the President's budget and that the NSF Bio- and Geosciences programs be increased by $40 million.

Leading scientists and program managers from all of the federal science agencies have recently developed an inter-agency, interdisciplinary venture called the Earth Systems Science program. The program, in which NASA and NSF are playing leading roles, is designed to focus research analysis and observation on precisely those issues crucial to understanding the greenhouse effect. The program is funded out of the budgets of the participating agencies and has the obvious potential to be the foremost federal entity for effecting the research needed on the greehouse effect and global climate change. The ability of NASA and NSF, to support, and lead, this program is absolutely crucial.

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The world's experience with regard to the stratospheric ozone "hole" over the Antarctic and the recently discovered depletion of global stratospheric ozone, as documented by last month's report of NASA's Ozone Trends Panel offer us the best historical lessons -- both positive and negative -- that can be applied to approaching the greenhouse effect.

In 1974, Dr. Sherwood Rowland and others demonstrated, in the laboratory, that CFC's played a role in destroying ozone. Shortly thereafter and over the subsequent 10 years satellite data uncovered the springtime appearance of the ozone hole over Antarctica. However, the world's scientists simply did not see the hole despite this annual data that revealed it clearly. As a result of this failure, the world lost an entire decade's opportunity to control the emissions of CFC's.

Instead, CFC emissions continued to grow, loading the atmosphere with new CFC molecules, as the world's industries continued their dependence on the chemicals. No protective policies were made and few incentives were created for industry to develop substitutes. (The exception to this scenario was the U.S. ban, in 1978, of the use of CFC's in aerosols). Perhaps the best way to understand how much was lost during that decade is to examine the world's response once science succeeded in "finding" the hole that 10 years' worth of ready data presented: 1) further scientific resources were committed to the problem, culminating in the recent Ozone Trends Panel report; 2) governments undertook to formulate policies, culminating in the Montreal Protocol signed last fall; and 3) industry began to look for economically productive solutions to the problem, culminating in recent announcements, by DuPont and the makers of polystyrene plastic foam used in fast-food packaging, of plans to eliminate the CFC's regulated under the Montreal Protocol. Had adequate scientific and policy-making resources been devoted to the CFC-ozone problem when the scientific story began to emerge in 1974, the solutions that are just developing now, in 1988, could have been found in 1978.

We cannot afford to repeat the negative precedents of the ozone problem in dealing with the greenhouse effect: we do not have a decade more to waste. Rather, we must emulate our success so far in moving to protect the stratospheric ozone layer. We will not be able to do that, however, unless the budget and operational priorities of the EPA, NASA, and NSF -- indeed of the entire government -- are shifted radically and immediately.

Senator GARN. Thank you very much, gentlemen. Your testimony has been very helpful. Now I will turn the gavel over to the real chairman.

Senator Proxmire, we are happy to have you join us.

Senator PROXMIRE. Thank you, Senator Garn.

Senator Garn is wonderful to come here and preside. It was an act of friendship for which I am deeply grateful. Of course, there is nobody better qualified to preside over a hearing on NASA or EPA, for that matter, than Senator Garn.

INTRODUCTION OF PANEL

Our the next witnesses will be Mr. Donald Theiler, Mrs. Linda Eichmiller, Mr. Roland Geddes, Mr. Robert Krill, and Mr. Jeff Schlegel. Mr. Theiler is the director of the Wisconsin Bureau of Air Management and represents the State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officials.

ENVIRONMENTAL PROTECTION AGENCY

STATEMENT OF DONALD THEILER, DIRECTOR, WISCONSIN BUREAU OF AIR MANAGEMENT, ON BEHALF OF THE STATE AND TERRITORIAL AIR POLLUTION PROGRAM ADMINISTRATORS AND THE ASSOCIATION OF LOCAL AIR POLLUTION CONTROL OFFICIALS

Senator PROXMIRE. Mr. Theiler, you come from a great state. We are delighted to have you here. [Laughter.]

Mr. THEILER. I agree, Senator.

Senator PROXMIRE. You are one of my bosses, you know.

Mr. THEILER. I don't know what to say about that, but I hope you will listen to what I have to say. I would like to congratulate you on your long tenure your in the Senate, and we are going to miss you both in Wisconsin and, I am sure, here in Washington when you retire at the end of the year.

I, as you noted, am the representative of the State Air Pollution Administrators and the Local Air Pollution Administrators, and I am also the vice president of the State Air Pollution Administrators Association and the chairman of the funding committee.

I am grateful for the opportunity to present staff and LAPCO's views on the federal budget request for fiscal year 1989 grants to the state and local air pollution control agencies under section 105 of the Clean Air Act.

The President's 1989 budget proposal for $95 million in grants to the state and local air agencies marks the third consecutive year we have been faced with level funding, and in 1987, we supported the President's request. We thought we would be able to live with that level of funding.

INADEQUATE FUNDING FOR STATE AND LOCAL AIR AGENCIES

Last year, however, state and local agencies were unable to offer such support, and we appeared here before you and testified that we could no longer operate efficiently with level federal funding. Unfortunately, when the budget process was complete, the 1988 grants to state and local air agencies totaled $93 million, a decrease of approximately 2 percent.

If the state and local air agencies are to effectively pursue measures to improve air quality and protect public health, we must be provided with adequate financial resources. We, therefore, request that in fiscal year 1989, state and local air agencies receive $105 million, or $10 million above the President's budget request.

Rather than go through my testimony that I have prepared in order to save time, I would just like to make a couple of comments and then turn it over to the other people on the panel.

We are faced with increasing demands on the budgets of the state and local air agencies. We are being requested to deal with ozone problems which have simply proved totally impracticable. Millions of people in our major cities are going to be faced with continued problems for the foreseeable future in many of these communities.

In addition, air toxics have become a very great emerging issue, being identified as one of the major environmental threats to the populations of most of our cities. There are other issues, as well. Industry is becoming much more sophisticated in dealing with the air agencies and in working with the programs and demand a much higher level of attention.

The citizens and environmentalists also are becoming much more sophisticated. Increasingly, they are asking sophisticated questions that we are having a very difficult time answering.

What is happening with level funding and decreased funding such as we have experienced over the last few years is that we are losing our resources. In Wisconsin, for example, we have shut down about 10 percent of our monitors. We have laid off 7 percent of the staff. We are facing a decreasing program at the same time the demands are increasing. We simply are not going to be able to do the job. It is as simple as that.

If you are interested in the details, my detailed statement will provide the details. Thank you.

Senator PROXMIRE. Thank you, very much, Mr. Theiler.

[The statement follows:]

STATEMENT OF DONALD THEILER, DIRECTOR, WISCONSIN BUREAU OF AIR MANAGEMENT, ON BEHALF OF THE STATE AND TERRITORIAL AIR POLLUTION PROGRAM ADMINISTRATORS AND THE ASSOCIATION OF LOCAL AIR POLLUTION CONTROL OFFICIALS

Mr. Chairman, Members of the Subcommittee, my name is Donald Theiler and I am the Director of the Wisconsin Bureau of Air Management. I appear here today on behalf of STAPPA--the State and Territorial Air Pollution Program Administrators--of which I am Vice-President and Chairman of the Program Funding Committee, and ALAPCO--the Association of Local Air Pollution Control Officials.

STAPPA and ALAPCO are the national associations of air pollution control agencies in the 54 states and territories and more than 150 major metropolitan areas across the country. The associations' members have primary responsibility for ensuring healthy air quality for our citizens and represent the technical expertise behind our nation's air pollution control laws and regulations. I am grateful for this opportunity to present STAPPA and ALAPCO's views on the Environmental Protection Agency's federal budget request for FY 1989 and, in particular, on the amount requested for state and local air pollution control agencies under Section 105 of the Clean Air Act.

The President's budget proposal for FY 1989 includes a request for $95 million for Section 105 grants to state and local air programs; this request is identical to that made last year. In fact, this marks the third consecutive year that the President has proposed level funding for Section 105 grants. In FY 1987, recognizing the efforts of both the President and Congress to reduce the federal deficit, the members of STAPPA and ALAPCO supported the President's request for level funding and, subsequently, put forth our best efforts to effectively manage our limited resources.

Last year, however, STAPPA and ALAPCO were unable to offer such support for the President's request. When we appeared here before you one year ago, we testified that we could no longer operate efficiently with level federal funding. We truly believed that we had taken every step possible to cut costs and supplement our budgets; but, as responsible public servants, we also believed that to continue to make sacrifices in our air programs would severely compromise our ability to provide the citizen's of this nation with healthful air. Furthermore, our endeavors were complicated by the fact that, in terms of real dollars, federal support had actually decreased. Consequently, we were compelled to request an increase in Section 105 air grants for FY 1988.

Unfortunately, when all was said and done and the budget process was complete, grants to state and local air agencies were not increased in FY 1988, nor did they once again remain level; instead, Section 105 grants in FY 1988 totalled $93.3 million, representing a decrease of approximately 1.8 percent from the previous two years. Needless to say, in the face of a severely eroded base program and at a time when state and local agencies were already struggling to make do with inadequate resources, this decrease in funding took its toll on the air program.

Mr. Chairman, Members of the Subcommittee, if state and local air agencies are to effectively pursue measures to improve air quality and protect public health, we must be provided with adequate financial resources. We therefore request that in FY 1989, state and local air agencies receive $105 million--or $10 million above the President's budget request--in grants under Section 105 of the Clean Air Act.

These are frustrating times for state and local air agencies; new and emerging issues aside, we are witnessing a rapid deterioration of the very foundation of the air pollution control program--the base or core program, designed to control criteria pollutants such as ozone, carbon monoxide and particulates. This base program has suffered over the past few years, as have efforts to address the increasingly hazardous problem of toxic air pollution; with reduced funding in the last year, this trend has become even more pronounced. This is particularly alarming in that an EPA report published last year concludes that the health, ecological and welfare risks associated with air pollution, especially exposure to criteria pollutants, are higher than those posed by almost every other environmental medium managed by the agency.

The highest price extracted as a result of poor air quality is in the form of human life. EPA has estimated that at least several thousand deaths per year are the result of exposure to criteria pollutants, including acid aerosols.

Further, EPA estimates that the cost of damage and soiling to materials, decreased commercial agricultural and forest yields and reduced visibility that result from criteria air pollutants exceeds several billion dollars per year.

The longer we wait to address air quality issues, the more costly an effective air program will become. We cannot afford further delay in implementing aggressive measures to control ozone, carbon monoxide, small particulates and air toxics. Yet, without additional resources, we will be unable to address these basic program components.

The serious health consequences associated with ozone nonattainment--including reduced lung function and respiratory infection--continue to be of great concern to the members of STAPPA and ALAPCO. According to EPA, as of the December 31, 1987 Clean Air Act deadline, approximately 70 major metropolitan areas in over 35 states are likely to have exceeded the health-based National Ambient Air Quality Standard for ozone. This ubiquitous problem places at risk every one of the 80 million people residing in nonattainment areas. Similarly, exposure to unhealthful levels of carbon monoxide also presents a serious threat to millions of individuals living and working in our major cities. Currently, about 70 areas in over 40 states may be exceeding the standard for carbon monoxide.

EPA has identified attainment of the ozone and carbon monoxide standards as a major environmental issues of the highest national priority. Next month, EPA is expected to issue a request for State Implementation Plans (SIPs) from nonattainment areas. To comply with this request, state and local agencies will be required to, among other things, prepare emission inventories and, in FY 1989, make a demonstration of attainment. Consequently, most nonattainment areas will find it necessary to employ more advanced models, such as the Urban Airshed Model. While use of the Urban Airshed Model would enable a nonattainment area to predict with a greater degree of accuracy the level of emission reductions necessary to achieve the standard, the cost of instituting this model is prohibitive for most areas--averaging approximately [illegible]0,000.

Additionally, in developing plans for and working toward attainment, state and local agencies will likely be obligated to optimize the benefits of existing programs, regulate previously unregulated sources, define Reasonably Available Control Technology for a variety of source categories, increase monitoring and enforcement and undertake numerous planning activities.

The members of STAPPA and ALAPCO believe that nationwide attainment of the ozone and carbon monoxide standards is worthy of our most diligent efforts. We note, however, that such efforts require significant resources and manpower; at this time we simply do not have the funds necessary to do what is required to ameliorate these hazardous problems.

Attainment of the National Ambient Air Quality Standard for small particulate matter (PM_{10}), promulgated by EPA in July 1987, is another high environmental priority, and one which is also a part of the base program. The health effects associated with exposure to small particulates include respiratory illness, especially in children, and even increased mortality.

With an attainment deadline of three years after approval of a State Implementation Plan (SIP), state and local agencies face a whole new set of resource-intensive responsibilities based upon the severity of their PM_{10} nonattainment problem. These responsibilities include the development of SIPs, the adoption and enforcement of regulations and the revision of New Source Review requirements. Additionally, every area of the country is required to install a full network of PM_{10}-specific equipment at a cost that could easily total \$2.5 million. The members of STAPPA and ALAPCO believe that it is necessary to take aggressive action to control small particulates in the ambient air; we are, therefore, frustrated by the financial restraints that we face in attempting to implement the standard.

Reducing the risk of exposure to toxic air pollutants is another high-priority activity that continues to suffer due to less-than-adequate funding. EPA has concluded that routine releases of a variety of toxic substances may be responsible for as many as 1,700 cases of cancer each year, with individual risk running higher than one in 100.

EPA's strategy for controlling air toxics relies almost exclusively upon state and local agencies. To date, activities for which we have been assigned responsibility include delegation and enforcement of National Emission Standards for Hazardous Air Pollutants (NESHAPs); control of high-risk point sources of "local" concern; development of technical, regulatory and administrative capabilities; assessment of the health impact in high-risk urban areas; and reduction of toxic air emissions from sources in these high-risk regions.

Further, pursuant to Section 313 of the Superfund Amendments and Reauthorization Act (SARA), in July of this year designated manufacturing facilities will submit to EPA and the states information pertaining to their annual releases of toxic chemicals. Once we receive this data, we will require resources to conduct analyses and develop plans for further action; right now the funds necessary for this effort do not exist. It is imperative that we have a comprehensive and effective air toxics control program in this country, yet we cannot foresee this becoming a reality if we are not provided with additional resources.

Another fundamental area that has been neglected due to lack of resources is training. In order to enhance and protect our nation's air quality, it is essential that state and local air pollution control agencies have qualified personnel well versed in such fields as air quality engineering, modeling and inspections and compliance monitoring. Newly-hired staff members must be adequately trained in order to perform their duties competently and experienced staff must receive periodic training to remain abreast of regulatory revisions and newly-adopted requirements.

Since the early 1970's, funding for EPA's training program has diminished drastically. The difficulties state and local agencies have encountered resulting from a decreased training budget have been compounded by the emergence of new programs for which improved skills and knowledge are essential. In addition, during the past several years, EPA has delegated to state and local agencies increased responsibilities for existing programs such as ozone and carbon monoxide nonattainment, PM_{10} and toxic air pollutants. To fulfill these responsibilities, training is desperately needed. We have attached to this testimony a more detailed description of state and local training needs, including our recommendations for addressing this issue. We urge you to seriously consider these options and allocate resources to the training program for air pollution control.

Recognizing that the responsibility for funding air programs does not rest entirely with the federal government, state and local agencies have sought alternate funding sources. Last year, STAPPA and ALAPCO completed a survey of permit and emission fees, which indicated that many state and local agencies are successfully endeavoring to supplement federal resources through the implementation of fee programs. In December 1987, the associations adopted a resolution to work closely with EPA to expand existing state and local fee programs. Unfortunately, without sufficient federal funding, such efforts alone cannot sustain an effective air program.

For the past few years, state and local air officials have faced a dilemma. We are sincerely committed to our responsibility for protecting public health and the environment; at the same time, we understand that this nation faces a huge federal deficit and that sacrifices must be made. As responsible government officials we have pursued every viable means by which to cut costs and supplement our budgets so that we are able to operate our programs with level and even reduced resources. However, we have become paralyzed by deficient federal funding and, as a result, the institutional program for controlling air pollution has suffered severe erosion. Consequently, we are unable to fulfill our very highest priority--to provide the citizens of this nation with healthful air. The members of STAPPA and ALAPCO believe that the President's budget request for FY 1989 seriously underestimates the funding necessary to protect public health and welfare from the adverse effects of air pollution. We therefore request that in FY 1989, state and local air pollution control agencies receive $105 million in grants under Section 105 of the Clean Air Act.

I thank you for this opportunity to testify today. I will be happy to answer any questions you may have.

TRAINING NEEDS FOR STATE AND LOCAL AIR POLLUTION CONTROL PROGRAMS

April 21, 1988

INTRODUCTION

In order to enhance and protect our nation's air quality, it is essential that state and local air pollution control agencies have qualified personnel who are well versed in such fields as air quality engineering, modeling, inspections and compliance monitoring, among others. Newly-hired personnel must be adequately trained in order to perform their jobs competently and experienced staff must receive additional training to remain abreast of regulatory revisions and newly-adopted requirements.

Training is an important form of federal support that state and local air pollution control agencies cannot entirely provide for themselves due to a lack of resources. Without federal assistance, state and local agencies find it difficult to prepare their technical engineering and scientific personnel to perform their duties adequately. Furthermore, the lack of training has caused the inconsistent application of Reasonably Available Control Technology (RACT) from area to area. It is likely that with improved training, these inconsistencies could be minimized. Unfortunately, the private sector is of limited assistance in the area of training because it has little incentive to offer comprehensive training to state and local agencies. Even the manufacturers of pollution control equipment do not frequently offer courses on the operation and maintenance of their equipment.

In light of the need for qualified air-agency personnel, it is essential that federal funding be increased to a level that will ensure air pollution control training for employees of federal, state and local regulatory agencies.

BACKGROUND

Under Section 103 of the Clean Air Act, the Environmental Protection Agency is required to "conduct and promote coordination and acceleration of training for individuals relating to the causes, effects, extent, prevention, and control of air pollution." Furthermore, EPA is required to provide grants to air pollution control agencies and other public or nonprofit entities for training purposes. According to Section 103, these training programs are to be offered free of charge to personnel of air pollution control agencies and at a "reasonable fee" to others.

Since its formation, EPA has played a key role in training state and local air pollution control personnel. During the early 1970's, EPA's Office of Manpower Development had a staff of nearly 50 employees and a budget of $5-6 million. Activities included manpower development programs and academic training (e.g., fellowships for postgraduate students, university classes, short courses and self-study programs). Since the 1970's, EPA's Air Pollution Training Institute (APTI) has conducted technical "short courses," as well as self-study and special courses, which have been beneficial to state and local air pollution control agencies. In fact, approximately 70 percent of the students who have attended the short courses alone have been employees of state and local agencies. Over 15,000 students availed themselves of the short, special or self-study courses between 1972 and 1987.

In addition to the APTI headquarters in Research Triangle Park, North Carolina, eight universities around the country, through the use of federal funding, have served as "Area Training Centers." Because of the diverse geographic locations of these centers, individuals have been able to save travel costs by attending classes close to home. The institutions that have participated include Rutgers University, the University of Florida, the University of Cincinnati, the Illinois Institute of Technology, the University of Texas at Dallas, California Polytechnic State University, the University of Washington, and Colorado State University.

Due to the success of EPA's efforts in the early years, state and local agencies soon became dependent upon the APTI and the Area Training Centers to provide training and manpower development for newly-hired and experienced personnel.

PROBLEM

Diminished Funding

Over the years, funding for EPA's training program has diminished drastically. Since 1972, EPA grants for the APTI have decreased from $1.8 million to zero in FY 1985. Congressional appropriations averaged $322,000 per year from FY 1980-1987 and, since FY 1985, were the only source of financial support for the APTI's short training courses, traineeships, fellowships, and curriculum development. In FY 1988, Congressional grants for the APTI were eliminated entirely.

As a result of this dramatic decrease in funds, EPA's academic training program has been curtailed sharply, the funding for the Area Training Centers has diminished, and the staff of the APTI has been reduced to four employees. (See attached information on APTI funding from FY 1972-1988.)

Emerging Programs

The difficulties state and local agencies have encountered resulting from the erosion of the federal training budget have been compounded by the emergence of new programs for which improved skills and knowledge are essential. In addition, during the past several years, EPA has delegated additional responsibilities for existing programs to state and local agencies for which training is desperately needed. These new and delegated responsibilities include, among others:

- PM_{10} - EPA recently promulgated a revised particulate standard which will require state and local personnel to be familiar with revised modeling, ambient and stack monitoring, enforcement, and emissions inventory procedures;

- ozone and carbon monoxide nonattainment - EPA's strategy for post-1987 attainment includes requirements for additional controls, planning, modeling, monitoring, and enforcement. Training is necessary to address minor source controls, fugitive emissions, motor vehicle emissions, volatile organic compounds, alternative fuels and safety inspections of onboard controls; and

- air toxics control - EPA's air toxics strategy, announced in June 1985, emphasizes increased state and local activities, such as multi-year development planning, ambient and stack monitoring, risk management, development of emission inventories, and identification of toxic "hot-spots." In addition, many state and local agencies are faced with the task of permitting and controlling emissions from municipal waste incinerators;

Other emerging air-quality issues for which training will be necessary include acid rain, indoor air pollution, ozone depletion, intermedia pollutants, and emergency response and community right-to-know provisions of the Superfund Amendments and Reauthorization Act.

The APTI staff has identified a number of existing courses that are in need of major revisions in order to reflect changing regulations and procedures and advancements in technology. These include the introductory air pollution control courses, as well as courses on dispersion models, field enforcement, source sampling for particulates, analytical methods for air quality standards, and source sampling of gaseous pollutants. Minor revisions are necessary for existing courses on atmospheric sampling; air monitoring; microscopy; control of carbon monoxide, ozone, nitrogen oxides and volatile organic compounds; hazardous waste incineration; quality assurance for emission measurements; and site selection for monitoring.

The estimated cost of updating just those short and self-study courses requiring major revisions by FY 1989 is approximately $305,000. Minor revisions will cost approximately $205,000. The estimated cost of necessary replacements to equipment for the APTI short courses is $115,000.

RECOMMENDATIONS

There are several approaches for addressing state and local training needs, all of which require additional federal financial assistance. Two such approaches are discussed below:

1) Strengthen the Air Pollution Training Institute, including the Area Training Centers (located in universities around the country) - According to EPA estimates, the total cost of developing new courses, updating those that must be revised, and revitalizing the Area Training Centers around the country would be as follows:

Short and Self-study Course Revisions (including the purchase of necessary equipment)	$765,500
New Projects and Development	764,000
Area Training Centers (short course presentation, traineeships and fellowships)	500,000
Personnel and Costs	467,500
TOTAL	$2,497,000

Therefore, in order to promote the training activities of the APTI to aid federal, state and local air pollution control agencies, Congress could specifically appropriate $2.5 million for the abovementioned activities.

2) Develop a state and local technical coordination program on a national basis - Through a program of information clearinghouses and technical workshops, state and local agencies would benefit from the exchange of valuable information, expertise and experience with one another. During recent years, STAPPA, ALAPCO and NESCAUM have sponsored a number of workshops related to air toxics, municipal waste combustion, monitoring and other air-quality-related issues, at which state and local representatives have learned of the experiences of their counterparts in other parts of the country. These programs have been an invaluable source of information and self-help for state and local agencies.

Based upon the success of this technical information exchange, it is likely that a technical coordination center would address some of the training needs of state and local air pollution control agencies. Issues that could appropriately be addressed by a technical coordination center include: air toxics, prevention of accidental releases, indoor air quality, volatile organic compounds, acid rain, woodstoves, mobile sources, disposal of ash from incineration, continuous emission monitoring, modeling, permitting, stack testing, control technologies, computer technology, interagency coordination, and regional planning.

A technical coordination program for state and local air pollution control agencies would require a specific Congressional appropriation of approximately $1 million.

CONCLUSION

It has become increasingly evident that training programs must be enhanced if state and local air pollution control agencies are to adequately carry out their responsibilities. The two alternatives described above are not mutually exclusive and could appropriately be implemented in combination. In fact, both strategies are consistent with the recommendations contained in the "Report of the Administrator's Task Force on Technology Transfer and Training," which EPA published on December 1, 1987.

TABLE 1
AIR POLLUTION TRAINING INSTITUTE FUNDING

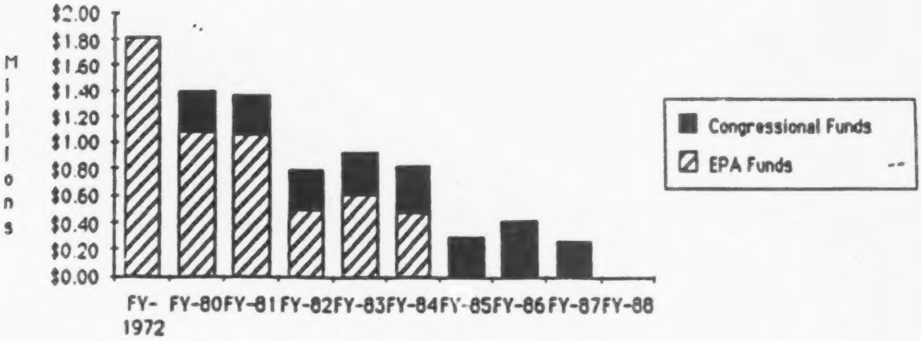
	EPA Funds	Congressional Funds	Total	# Students
FY-1972	$1,820,000	$0	$1,820,000	(a)
FY-80	$1,100,000	$300,000	$1,400,000	2133
FY-81	$1,060,000	$320,000	$1,380,000	1998
FY-82	$500,000	$300,000	$800,000	826
FY-83	$624,000	$310,000	$934,000	959
FY-84	$476,000	$335,000	$811,000	667
FY-85	$0	$310,000	$310,000	659
FY-86	$0	$432,000	$432,000	825 (b)
FY-87	$0	$265,300	$265,300	564
FY-88	$0	$0	$0	0

(a) data not available
(b) includes several courses paid for with 105 funds, materials supplied by APTI

Source: EPA/APTI, 1/87, 3/88

3/21/88; NESCAUM

FIGURE 1
AIR POLLUTION TRAINING INSTITUTE FUNDING



STATEMENT OF LINDA EICHMILLER, ASSOCIATION OF STATE AND INTERSTATE POLLUTION CONTROL ADMINISTRATORS

NATIONAL WATER QUALITY PROGRAM

Senator PROXMIRE. Our next witness is Linda Eichmiller, who is deputy director of the Association of State, Interstate Water Pollution Control Administrators.

Ms. EICHMILLER. Thank you, Mr. Chairman. The association represents those state officials who manage the National Water Quality Program in the 50 states, as you are familiar.

At the outset, we would like to thank you for your many years of support to the Clean Water Act programs. I would like to spend my time today talking about two major issues. One is the impact of the appropriation on state management of the National Water Quality program and the future of the municipal construction under the state revolving loan fund.

As you know, in 1981, the Water Quality Act was amended, and that act cut the federal involvement in the municipal financing program by 50 percent, thereby making a very substantial contribution to reduction of the deficit. That momentum was continued with the Clean Water Act Amendments of 1987, which terminates the federal involvement in municipal wastewater treatment in exchange for short-term capitalization of the state revolving loan fund.

The 1987 amendments also establish many new requirements that states must implement related to toxicity control, nonpoint sources, storm water permitting, ground water protection, and sludge disposal.

Following the enactment of the act, the appropriations for this fiscal year, 1988, reduced the support for section 106 state management of the national program by approximately $10 million. That brings us to today, when we are faced with the President's budget proposal, which is to fund municipal wastewater construction at $1.5 billion and to reduce by $60 million the support for state management of the national clean water program.

Our concerns are very fundamental: That these over 30-percent reductions to support for the state program are going to have very significant impacts on the states' ability to provide environmental protection. We have two simple recommendations.

In the area of state management of the national program, the President's budget would, in effect, reduce overall the state work force by approximately 10 percent. It will be very difficult to maintain the existing programs, not to mention implement the 1987 amendments and its many new requirements.

Therefore, we recommend that section 106 state management assistance grants in the Clean Water Act be restored to its 1987 fiscal year level of $72.1 million. This is in recognition of the many requirements, all of them new, in the 1987 amendments.

STATE REVOLVING LOAN FUNDS

Second, regarding the state revolving loan funds, I would like to emphasize to you that we are very committed to capitalizing those funds and phasing the federal government out of the business of wastewater treatment financing. For the $18 billion in the Clean Water Act that was authorized, states and local governments willingly agreed to assume $75 billion in long-term needs.

This is, I might add, a very good bargain for the federal government that will assist with the deficit reduction. The President's budget violates that commitment, regrettably, and makes it very difficult for us to develop a viable state revolving loan fund. We recognize that any funds that the federal government provides are really seed money, and it is our responsibility to make maximum advantage of that seed money, leverage it to its capacity and, in essence, outpace inflation and begin to buy down needs.

In doing that, we are engaged currently in a very fierce race against the clock, and we ask your support for us in that race by maintaining municipal construction financing at the authorized level of $2.4 billion. Thank you.

Senator PROXMIRE. Thank you very much, Ms. Eichmiller.

[The statement follows:]

STATEMENT OF LINDA EICHMILLER, DEPUTY DIRECTOR, ASSOCIATION OF STATE AND INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS

Mr. Chairman, members of the Subcommittee. My name is Linda Eichmiller, I am the Deputy Director of the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA). Our organization is the national, professional Association of State Administrators of this nation's water quality program. As those provided with the responsibility for program implementation, the States are pleased to have the opportunity to share with you our views on the level of appropriations needed to effectively implement the Clean Water Act of 1987.

Mr. Chairman, let me first extend to you our appreciation for your many years of service to the Congress and to the people of the United States. During that time you have continually exhibited professionalism and demonstrated the finest quality, that of Statesman. We wish you well in your retirement.

Now I would like to highlight for you the major issues facing this important program.

ISSUES HIGHLIGHT

- THE CLEAN WATER ACT OF 1981:
  - .. CUT THE AUTHORIZATION FOR CONSTRUCTION GRANTS FROM $5 BILLION TO $2.4 BILLION,
  - .. REDUCED THE FEDERAL COST SHARE FROM 75% TO 55%, AND
  - .. SIGNIFICANTLY LIMITED PROJECT CATEGORIES ELIGIBLE FOR FEDERAL FUNDING ASSISTANCE.
- THE CLEAN WATER ACT OF 1987 PROVIDED A TRANSITION FROM THE FEDERAL GRANTS PROGRAM TO A STATE REVOLVING LOAN FUND PROGRAM (SRF) WITH $18 BILLION AUTHORIZED BETWEEN FY 1987 AND 1994.
- THE FISCAL YEAR 1988 APPROPRIATION FOR THE:
  - .. CONSTRUCTION GRANTS PROGRAM WAS $2.304 BILLION, AND
  - .. SECTION 106 STATE MANAGEMENT ASSISTANCE GRANTS WAS $60.8 MILLION — A $10 MILLION REDUCTION FROM THE EXISTING LEVEL.
- THE PRESIDENT'S FISCAL YEAR 1989 BUDGET REQUEST IS A MERE $1.5 BILLION FOR MUNICIPAL FINANCING AND REDUCES BY OVER $60 MILLION THE SUPPORT TO STATES FOR MANAGEMENT OF THE NATIONAL WATER QUALITY PROGRAM.

PROGRAM IMPACTS

- THE PRESIDENT'S BUDGET REQUEST REPRESENTS A:
  - .. 34% REDUCTION IN FUNDING FOR MUNICIPAL CONSTRUCTION AND
  - .. 32% REDUCTION IN FUNDING FOR STATE MANAGEMENT.
- THESE REDUCTIONS TRANSLATE DIRECTLY INTO A 10% REDUCTION IN STATE WORKFORCE -- EQUIVALENT TO NO LESS THAN AN AVERAGE OF 10 STAFF POSITIONS LOST IN EACH STATE AND UP TO 30 POSITIONS IN SOME STATES SUCH AS MASSACHUSETTS, NEW YORK, WEST VIRGINIA, MISSOURI, AND MICHIGAN. STATES INDICATE THE FUNDING REDUCTIONS WILL BE DISTRIBUTED AMONG NATIONAL PROGRAM ACTIVITIES IN THE FOLLOWING MANNER:

  26% — WATER QUALITY MANAGEMENT PLANNING,
  24% — MUNICIPAL MANAGEMENT,
  11% — STATE PERMITTING,
  11% — COMPLIANCE AND ENFORCEMENT,
  10% — MONITORING AND REPORTING,
  9% — GROUNDWATER PROTECTION, AND
  9% — PROGRAM ADMINISTRATION

RECOMMENDATION

THE ASSOCIATION RECOMMENDS THAT:

1) **MUNICIPAL WASTEWATER TREATMENT CONSTRUCTION BE FUNDED AT THE $2.4 BILLION AUTHORIZED LEVEL TO ADEQUATELY CAPITALIZE THE SRF AND PHASE OUT FEDERAL INVOLVEMENT IN AN ORDERLY MANNER.**

2) **SECTION 106 STATE MANAGEMENT ASSISTANCE GRANTS BE RESTORED TO THE FISCAL YEAR 1987 LEVEL OF $72.1 MILLION IN RECOGNITION OF THE MANY NEW REQUIREMENTS EMBODIED IN THE 1987 WATER QUALITY ACT.**

3) **FUNDING BE ALLOCATED TO SECTION 319 FOR NONPOINT SOURCE CONTROL, BUT NOT AT THE EXPENSE OF EXISTING STATE MANAGEMENT ASSISTANCE GRANTS.**

PROGRAM HISTORY - NEW FEDERALISM

As one of his first major actions, President Reagan withheld his FY 1982 Budget request for wastewater treatment "until and unless appropriate reforms were instituted by the Congress." In response to the new President's demands, Congress enacted the Clean Water Act Amendments of 1981, which significantly altered the foundation upon which the construction grants program had been built. Changes passed by the Congress included:

- a 50% cut in the authorized amount of Federal funding (from $5 billion to $2.4 billion),
- elimination of numerous eligible funding categories, and
- reduction in the Federal cost share from 75% to 55%.

And, while expressing its willingness to accept what was then determined to be a $36 billion "Federal Exposure", the Administration revised its funding needs estimate from over $100 billion to $75 billion.

Recognizing the clear intent of the Administration to significantly reduce or eliminate Federal funding for this vital program, State executives and environmental agency officials explored alternatives to ensure the continuation of funding assistance for local governments, in perpetuity. Working closely with Congressional leaders, the results of the States' efforts were embodied in the 1987 Water Quality Act. The State Revolving Loan Fund program (SRF) was, therefore, specifically designed to transition from the Federal grants program to a State managed revolving loan program. Many other ambitious new program requirements (and authorizations) were also established for control toxics, stormwater and nonpoint sources.

States were willing to accept the new responsibility of implementing the SRF because there was a clear Congressional understanding that States would need adequate funding and a reasonable period of transition to implement the new program. Embracing the concept of new Federalism, the States assumed an estimated funding need in excess of $75 billion, in exchange for a statute which provided a nine year, $18 billion transition.

Figure 1

MILESTONES
MUNICIPAL FUNDING PROGRAM PHASEOUT
($Billions)

	Annual Federal Authorization	Municipal Waste Treatment Needs[a]	Federal Exposure[b]	State and Local Responsibility
1980	$5.0	$119	76%	24%
1981	$2.4	$118	36%	64%
1984	$2.4	$109	33%	67%
1987	$2.4	$ 76	21%	79%
1995	-0-	Unknown	0%	100%

a. Based on the biennial US EPA Needs Survey.
b. The percentage of treatment needs eligible for Federal funding.

The covenant, so delicately established between Congress, the Administration and the States, is regrettably falling to ruin. The Administration's proposal to cut the Clean Water Program by almost 35%, even after it had been cut by more than half in 1981, most certainly undermines the credibility and long term viability of the SRF program.

PRESIDENT'S 1989 BUDGET

The Federal government relies on its partner, the States, to manage and implement the nationally mandated Clean Water Act. The President's FY 1989 Budget proposal (Figures 2 and 3) is an assault on that "partnership" because it proposes a:

- 34% cut of $804 Million in Federal support below FY 1988 levels for construction of wastewater treatment facilities.
- 32% cut of $61 Million in support for State management of the national program. [Section 106, 205(g), 205(j)(1), 205(j)(5), and 604(b)]

PRESIDENT PROPOSED FISCAL YEAR 1989 BUDGET

FIGURE 2

	FY 87 APPROPRIATION	FY 88 APPROPRIATION (Millions)	FY 89 PRESIDENT'S BUDGET	CHANGE FROM FY 88 LEVEL	
I. MUNICIPAL FINANCING					
Construction Grants	$2361.0	$2304.0	$750.0	-$1554.0	
State Revolving Loan Funds	NA	NA	750.0	+ 750.0	
SUBTOTAL	$2361.0	$2304.0	$1500.0	-$ 804.0	(-34%)
II. STATE MANAGEMENT GRANTS					
A. WATER QUALITY:					
Section 106[a/]	71.1	60.85	60.2	- 0.65	
205 (g) Management[b/]	94.4	92.2	49.7*	-42.5	
205 (j)(1) Management[c/]	19.0	13.8	5.16*	- 8.64	
205 (j)(5) Management[d/]	11.6	23.0	8.6*	-14.4	
604 (b) Planning[e/]	NA	NA	5.22*	+ 5.22	
Nonpoint Sources	-0-	-0-	-0-	—	
SUBTOTAL	$196.1	$189.85	$128.88	-$60.97	(-32%)
B. OTHER:					
CLEAN LAKES	4.5	-0-	-0-	-0-	
AIR	95.0	92.6	95.0	+ 2.4	
PUBLIC WATER SUPPLY	33.5	33.5	33.5	-0-	
UIC	9.5	9.5	9.5	-0-	
HAZARDOUS WASTE	66.0	64.8	66.0	+ 1.2	
UNDERGROUND STORAGE TANKS	6.7	6.6	9.0	+ 2.4	
WELLHEAD PROTECTION	-0-	-0-	-0-	-0-	
SUBTOTAL	$215.2	$207.0	$213.0	+$ 6.0	(+3%)
III. SUPERFUND					
TRUST FUND	1148.0	1128.0	1600.0	+472.0	(+42%)
UNDERGROUND TANK CLEANUP (UST)	NA	14.4	50.0	+ 35.6	(+247%)
IV. US EPA OPERATIONS					
FUNDING	$1552.0	$1581.0	$1629.0	+$48.0	(+3%)
WORK YEARS	11,241	11,730	11,730	-0-	

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a. Assumes 3% of funds appropriated in FY 89 will be reserved for Indian Tribes and not available for State use. [Not specifically required by the statute.]
b. States can reserve 4% of the Title II authorization and 4% of Title VI grant awards for administration.
c. Up to 1% of Title II appropriation. Table assumes 40% of setaside goes to areawide planning agencies (vs. States).
d. 1% of the Construction Grants appropriated.
e. Up to 1% of the Title VI appropriation. Table assumes USEPA gives 40% of the setaside to regional planning agencies. [Not specifically required be statute.]
* Note: States have a minimum floor which is taken from the general appropriation.

Figure 3

	Clean Water Act Authorization ($Billions)	President's Proposal
FY 1989	$2.4	$1.5
FY 1990	$2.4	$1.3
FY 1991	$2.4	$1.1
FY 1992	$1.8	
FY 1993	$1.2	
FY 1994	$0.6	
TOTAL	10.8	$3.9

The actual impact is far more significant than the difference between the above two columns (i.e. $6.9 billion) would indicate because of the:

.. cumulative impacts over time,
.. lost opportunity for leveraging and other innovative financing to supplement the Federal program,
.. loss of earned interest to use for local construction,
.. inflation rates, and
.. need for increased State and local debt to support the SRF.

States recognize that Federal capitalization of SRFs represents seed money which must be quickly used to maximum advantage so as to outpace inflation and buy down even the $33 Billion in core needs (treatment, interceptors, infiltration/inflow, and new collector systems). As Figures 4 and 5 indicate, the 1987 Water Quality Act gives States the impetus to take the initiative. The President's Budget does not.

Federal funding decreases of the magnitude in the President's Budget, coupled with the 50% reduction in 1981, will significantly hinder the States' efforts to protect and enhance surface and groundwater quality nationwide. This is particularly true for the:

- creation of the State Revolving Loan Funds,
- achievement of acceptable levels of municipal and industrial compliance, and
- implementation of the new priorities in the 1987 Water Quality Act (e.g. nonpoint sources, stormwater, and toxics controls).

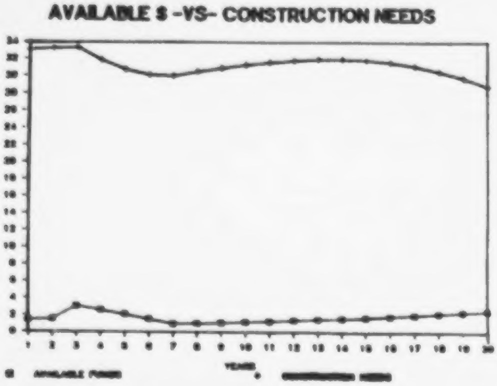
RED-TAPE

Reductions in the President's Budget are proposed at a time when USEPA is increasing bureaucratic requirements. Even with Congress demanding a straightforward, simplified and flexible program, USEPA guidance, especially for the SRF, has become so cumbersome and complex as to render it nearly unworkable, according to the majority of State environmental managers. States are willing to attempt program implementation, but recognize that it will be far more difficult and significantly more costly to them than the program envisioned by Congress.

FIGURE 4

COMPARISON
STATE REVOLVING LOAN FUND AUTHORIZATION BY THE
1987 WATER QUALITY ACT
with
THE PRESIDENT'S FY 1989 BUDGET
1989 - 2009
(Dollars in Billions)

1987 Water Quality Act
Authorization Levels



✤ After 20 years, core construction needs start declining to a $28 Billion level.

■ The available funds (SRF capitalized at authorized levels with a 20% State match and loan repayments) rise gradually to $2.6 Billion.

President's FY 1989 Budget

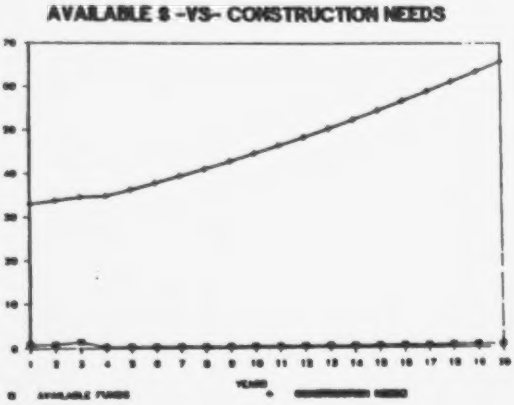
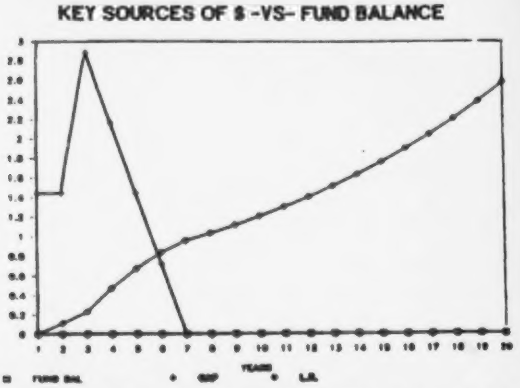


FIGURE 3

COMPARISON
STATE REVOLVING LOAN FUND AUTHORIZATION BY THE
1987 WATER QUALITY ACT
with
THE PRESIDENT'S FY 1989 BUDGET
1989 - 2009
(Dollars in Billions)

1987 Water Quality Act
Authorization Levels

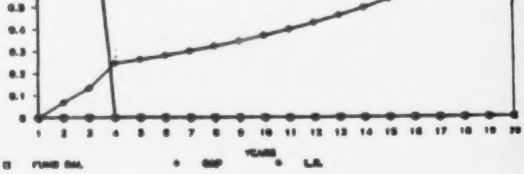


✦ Capitalization includes SRF authorization levels and the 20% State match.

◆ After 20 years, loan repayments reach $2.6 Billion.

■ Projections assume full expenditure of funds each year.

President's FY 1989 Budget



Also frustrating, is the USEPA intent in their guidance to stay involved in SRF decision-making (in some cases in perpetuity - long after Federal funds terminate), while the Congressional intent was to phase out Federal involvement in the municipal financing program by 1996. "Never have so many noses peeked over so few shoulders," observed one State official.

LETTER OF CREDIT

In addition to the President's FY 89 Budget reduction proposals and the unnecessary complexity of USEPA implementation policies, there is another controversial wrinkle — the Letter of Credit. The restricted Letter of Credit (LOC) is a method of funding the SRF which has not been approved by Congress. And, even though it was clearly the intent of Congress to provide SRFs with cash payments, the USEPA and Office of Management and Budget have crafted a funding mechanism which will:

- Significantly increase State/local borrowing and administrative costs,
- Preclude or hamper State ability to use Federal funds for purposes authorized by law (i.e. as security for State bond issues, to guarantee municipal debt, accrue interest, or refinance projects),
- Endanger the status of tax-exempt debt since a LOC (rather than cash payments) may well result in a "Federal Guarantee" which, according to the 1981 and 1984 Tax Laws, cannot be used for tax-exempt debt,
- Slow project construction and municipal compliance,
- Delay SRF implementation by stretching out payments well beyond the 2 - 3 years contemplated in the law, and
- Eliminate, according to USEPA, an estimated $2-$4 billion from the Congressionally authorized funding level.

Each impediment to the SRF decreases the attractiveness of the program to local governments who must, after all, repay the loan. Complexities and delays make it extraordinarily difficult for States to build the momentum necessary to retire the $75 - 100 Billion in wastewater treatment needs. And, according to rating agency and bonding experts, the lack of stability associated with the Administration's funding scheme, will undoubtedly increase costs for leveraging and other financing.

LEGISLATIVE MANDATES

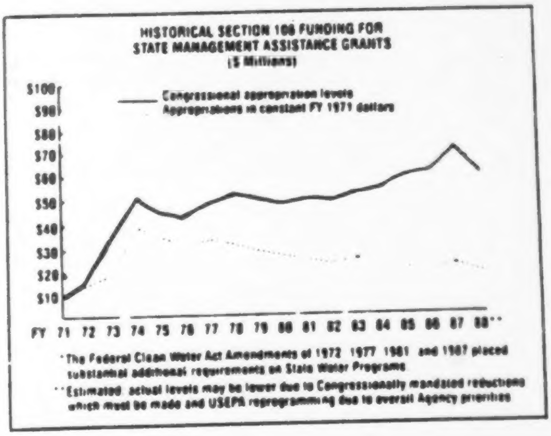
1987 Water Quality Act — In addition to creation of the State Revolving Loan program, Congress provided new priority initiatives which will be placed in serious jeopardy, if the Administration's funding proposals are adopted. States must meet many important short deadlines (see Attachment A). Funds are not requested for the following new programs:

- nonpoint source abatement,
- toxics control,
- stormwater permit control,
- groundwater protection, and
- sludge management.

The Association, and the States involved, are particulary concerned about the trend they see emerging of Congress creating and instituting prescriptive legislation, which from the outset has little chance of receiving adequate funding for implementation. Section 319 of the 1987 Water Quality Act, which authorized $400 Million for ambitious nonpoint source mandates, is a good example. The President's Budget requests no funding for this program. States believe that without funding, adequate implementation cannot occur.

Existing Programs — Federal requirements have quadrupled since 1972. Federal funding support to the States, however, has been steadily reduced. And, these reductions have been exacerbated by the rate of inflation (Figure 6). To cope with the many inconsistencies between Federal "demands and dollars," States have instituted economies and streamlined procedures to efficiently manage for "environmental results". There is no fat left in this program. The Administration's funding proposals are expected to have a long term devastating effect, because the proposed cuts translate directly into reduced levels of environmental protection.

FIGURE 6


HISTORICAL SECTION 106 FUNDING FOR STATE MANAGEMENT ASSISTANCE GRANTS ($ Millions)

*The Federal Clean Water Act Amendments of 1972 1977 1981 and 1987 placed substantial additional requirements on State Water Programs

**Estimated: actual levels may be lower due to Congressionally mandated reductions which must be made and USEPA reprogramming due to overall Agency priorities

LOCAL GOVERNMENT IMPACTS

The President's Budget dealt a major setback to efforts of American cities and towns which must comply with the letter and spirit of the Clean Water Act. Many municipalities are woefully short of meeting the Federal mandate to comply by July 1, 1988 with secondary treatment requirements and will be impacted by the President's Budget (see Attachment B). Over 1700 projects totalling $13 Billion needed future assistance just to meet that deadline. In addition, comprehensive stormwater amendments were passed by Congress in 1987. These unfunded mandates place a tremendous resource burden on State and local governments. States, therefore, will need to draw on the resources in the Section 106 program to implement this new initiative.

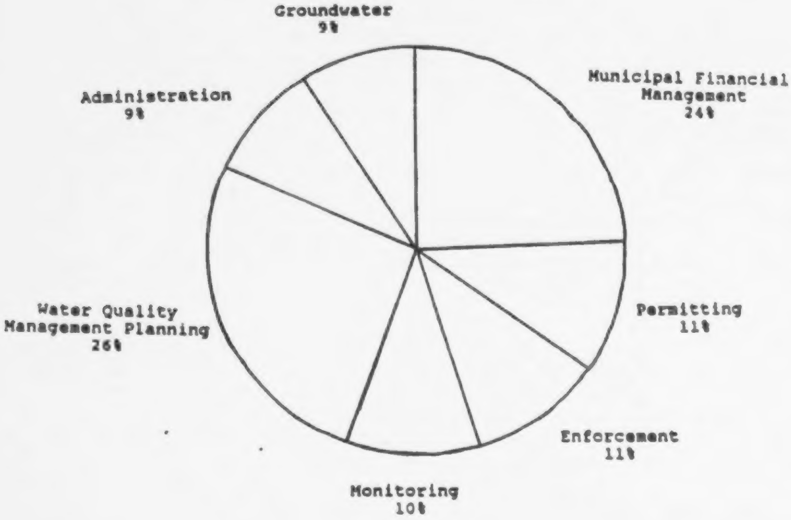
SPECIFIC STATE PROGRAM IMPACTS

NPDES — State permitting and enforcement activities, according to a recent ASIWPCA survey of the States, will adsorb at least 22% of the reductions in the President's Budget. Under State and Federal law all municipal and industrial sources must have National Pollutant Discharge Elimination System (NPDES) permits. With the expansive new requirements placed on States by the 1987 Water Quality Act, the President's budget cuts, if accepted by the Congress, will:

- Backlog — Delay permitting and increase the backlog of expired permits. This will jeopardize compliance/enforcement and development of quality permit conditions.
- Toxics — Curtail expansion of State programs to address toxicity and jeopardize attainment of the February 4, 1989 deadline for incorporating toxic limits into permits.
- Stormwater — Delay compliance with the 1987 Amendment deadlines for permitting and enforcing municipal and industrial stormwater requirements.
- Delegation — Jeopardize the 39 State NPDES delegations.

FIGURE 7

Allocation of the President's FY89 Budget
reduction of $60.97 Million for
State management of the national
water quality program under
Sections 106, 205(j), 205(g), and 604(b) of the
Water Quality Act



Monitoring — According to our survey, monitoring and reporting activities will absorb at least 10% of the reduction. Chemical and biological monitoring for conventional and toxic pollutants, though complex and expensive, is essential to maintenance of an effective Clean Water Program. Monitoring for toxics, as required by the new law, will be particularly hard hit, if Congress accepts the President's proposed funding levels. Specific activities reduced will likely include:

- identification of toxicity and other environmental problems,
- compliance/enforcement,
- monitoring for nonpoint sources,
- determination of trends in water quality, and
- evaluation of program effectiveness.

Groundwater — Survey results indicate that groundwater protection activities will absorb at least 9% of the reduction. The proposed FY 1989 budget will decrease momentum in this vital program at the very time when expansion is called for. State activities most affected include:

- identification of groundwater contamination,
- groundwater standards and classification systems,
- preventative groundwater management,
- source permitting,
- sludge disposal, and
- technical assistance to local governments.

Strategic Planning — Planning activities will absorb at least 26% of the reduction. Strategic development of quality environmental programs may well be severely curtailed.

- Standards — Review and revision of State water quality standards will be delayed, making water quality based decisions increasingly difficult to complete. State incorporation of toxic criteria as required by the 1987 Amendments will be particularly hard hit.

- Programs — Development of regulatory and other programs (e.g. groundwater, State Revolving Loan, nonpoint sources, trend monitoring and results tracking) will be substantially reduced, and in some cases eliminated.
- Controls — Severe reductions in development of control requirements will undoubtedly need to be made (e.g. wasteload allocations, water quality based permits).

Nonpoint Sources — The 1987 Amendments established, under Section 319, a new program for State management of nonpoint source pollution. The President's Budget provides no funds for the new program, and eliminates what had been heretofore provided for lake protection. Faced with declining levels of Federal support, States will be hard pressed to give emphasis to this new Section 319 mandate.

Cross Media Impacts — Most States established their base environmental program with water program funding which continues to be the cornerstone of support for laboratory services, data management, administration, etc. A major cut in the water program will have negative consequences for not only water quality, but also other media programs such as hazardous waste management, Superfund, drinking water, and pesticide management.

BOTTOM LINE

The President's Budget makes precipitous reductions of over 30% in Federal funding for municipal financing and State management of the national water quality program. It violates the 1987 Water Quality Act commitment to a 10 year $18 billion municipal financing phase out and is woefully inadequate to meet other national water quality needs and mandates.

The Administration's Budget seriously jeopardizes this nation's surface and groundwater protection and cleanup. The Clean Water Program has been a tremendous success to date, yet there is additional work that must be completed to ensure clean and safe water. And, even with the funding amounts authorized by Congress, it will be difficult to maintain the progress and meet the many new requirements in the 1987 Water Quality Act. Reductions in support to State management of the national program could have a devastating effect.

Water is the life spring of all living creatures. It must be protected and maintained to ensure fresh, clean water for every citizen of these United States. This nation cannot afford to let our wastewater systems go down the drain.

ATTACHMENT A

DEADLINES APPLYING TO STATE ACTION

State Revolving Loan Funds

States must notify US EPA of their intent to use Title II grants to capitalize their fund by:

.. 5/5/87 for FY87 funds, and
.. 6/18/87 for FY88 funds.

Stormwater Permitting

For industrial sources and municipalities with 250,000 or greater population:

.. stormwater permit applications must be received by February, 1990,
.. permits must be issued by February, 1991 and
.. compliance must be achieved by February, 1994.

For municipalities with 100,000 - 250,000 in population:

.. stormwater permit applications must be received by February, 1992,
.. permits must be issued by February, 1993, and
.. compliance must be achieved by February, 1996.

Post-BAT

States must develop individual control strategies for toxics by February 4, 1989.

Compliance with individual control strategies is required by February 4, 1992.

Penalties

After July 1, 1988, State civil penalty authority in NPDES delegated States must be revised to cover pretreatment violations.

Sludge

After 2/21/87, NPDES permits must include any appropriate sludge management requirements.

After 8/31/88, discharge sources must comply with US EPA promulgated numeric or design standards (this is one year after US EPA promulgation is required). If construction is required, an extension is allowed until 8/31/89.

Nonpoint Sources

By August 1988, States must submit nonpoint source program plans to US EPA for approval which identify program status, problems, and future plans. Future funding under Section 319 is contingent upon US EPA approval.

DEADLINES APPLYING TO STATE ACTION

CHRONOLOGICAL

2/21/87 NPDES permits must include any appropriate sludge management requirements.

5/5/87	States must notify US EPA of their intent to use FY87 Title II grants to capitalize their revolving loan funds.
6/18/87	States must notify US EPA of their intent to use FY88 Title II grants to capitalize their revolving loan fund.
7/1/88	NPDES delegated States must begin revising their civil penalty authority to cover pretreatment violations.
8/88	State nonpoint source program plans must be submitted to US EPA for approval which identify program status, problems, and future plans.
8/31/88	Discharge sources must comply with US EPA promulgated sludge numeric or design standards (this is one year after US EPA promulgation is required). If construction is required, an extension is allowed until 8/31/89.
2/4/89	States must submit their individual toxic control strategies to US EPA for approval.
2/1990	Stormwater permit applications must be received for industrial sources and municipalities with 250,000 or greater population.
2/1991	Stormwater permits must be issued for industrial sources and municipalities with 250,000 or greater population.
2/1992	Stormwater permit applications must be received for municipalities with 100,000 - 250,000 in population.
2/4/92	Compliance with individual control strategies is required.
2/1993	Stormwater permits must be issued for municipalities with 100,000 - 250,000 in population.
2/1994	Compliance must be achieved with stormwater permits for industrial sources and municipalities with 250,000 or greater population.
2/1996	Compliance must be achieved with stormwater permits for municipalities with 100,000 - 250,000 in population.

HIGHLIGHTS OF USEPA SCHEDULED AGENDA IMPLEMENTING THE 1987 WATER QUALITY ACT

In their effort to implement requirements of the 1987 Water Quality Act, the US EPA has developed the following schedule of major activities taking place up to two years after enactment.

	NONPOINT SOURCES CLEAN LAKES	TOXICS	GRANTS/SRFS
1987			
JUNE	Publish draft NPS & Clean Lakes guidance		
JULY		Publish guidance on State review & individual control strategies (304l)	Publish the guidance
AUGUST		Propose water quality standards regulations	
SEPTEMBER			
OCTOBER	Final guidance for 205(j) passthru and NPS	Propose regulation on numeric water quality standards criteria	
NOVEMBER			Publish interim final regulations for Title II amendments
DECEMBER		Promulgate water quality standards regulations	
1988			
JANUARY	Report to Congress on NPS implementation		
FEBRUARY	Propose any needed NPS regulations; publish lake restoration manual		Report to Congress on effectiveness of innovative/alternative technology
MARCH		Propose technical NPDES toxic regulations	
APRIL	States submit list of waters impaired & NPS cause (305b)	States submit list of problem waters & point source causes in 305(b) report	
MAY			
JUNE			
JULY			State notice of intent to use grant funds in the SRF for FY89 is due
AUGUST	States submit NPS assessment and management plans		
SEPTEMBER	Guidance on EPA action after disapproval or State default on NPS submissions		
OCTOBER	Report to Congress on lakes		
NOVEMBER			
DECEMBER			
1989			
JANUARY	Report to Congress on NPS program implementation (319)		
FEBRUARY	Approval/disapproval of State plans and assessments for NPS	States submit toxic assessment & individual control strategies; publish technical NPDES regulations	

	SLUDGE	NPDES/STORMWATER/ENFORCEMENT	ESTUARIES/WETLANDS/GROUNDWATER
1987			
JUNE		Draft guidance for administrative orders & State preemption	Publish groundwater part of NPS guidance under Section 319
JULY			
AUGUST	Promulgate first technical sludge criteria	Draft guidance on partial delegation	Memorandum of agreement with the CORPS on Section 404 wetlands enforcement
SEPTEMBER	Draft State management regulations	Draft antibacksliding guidance	
OCTOBER		Issue interim guidance on partial delegation	
NOVEMBER		Extend application deadline for stormwater permits	Designate estuaries for management conferences
DECEMBER		Draft stormwater guidance	Final Section 320 grant guidance for estuaries
1988			
JANUARY		Propose stormwater regulation	Report to Congress on NPS implementation under Section 319 for groundwater
FEBRUARY		Publish guidance on antibacksliding	
MARCH	Draft guidance for non-priority POTWs	Propose revisions to NPDES program requirements	
APRIL		Publish final stormwater guidance	Groundwater information covered under Section 319 submitted in 305(b) report
MAY			
JUNE	Promulgate second set of sludge criteria		
JULY			
AUGUST			States submit NPS assessment and managem plan under Section 319 for groundwater
SEPTEMBER	Promulgate State management regulations		
OCTOBER		Report to Congress re: stormwater dischargers exempt from NPDES permits	
NOVEMBER			
DECEMBER		Report to Congress on enforcement mechanisms	
1989			
JANUARY		Publish technical stormwater guidance	Report to Congress on NPS program implementation for groundwater under 31
FEBRUARY		Promulgate stormwater regulation	Approve/disapprove State NPS plans and assessments for groundwater under 319

	EFFLUENT GUIDELINES/ PRETREATMENT	INDIAN TRIBES	
1987			
JUNE			
JULY		Issue proposal for resolving conflicts with State water quality standards	
AUGUST	Final guidelines for organic chemicals, plastics, & synthetics		
SEPTEMBER			
OCTOBER	Propose removal credit rule for pretreatment		
NOVEMBER			
DECEMBER	Draft guidance on pretreatment of conventionals	Publish funding guidance for Sections 106 and 319	
1988			
JANUARY			
FEBRUARY		Report to Congress on Tribal wastewater treatment needs	
MARCH			
APRIL	Publish final guidance on pretreating conventionals		
MAY			
JUNE	Promulgate removal credit regulations		
JULY			
AUGUST		Final regulations on treating Tribes as States	
SEPTEMBER			
OCTOBER			
NOVEMBER			
DECEMBER			
1989			
JANUARY			
FEBRUARY	States submit toxic assessments & individual control strategies (Section 304(l))		

ATTACHMENT B

ASIWPCA 1989 BUDGET SURVEY
Results
April 25, 1988

Municipal wastewater treatment projects impacted by President's Budget.

The President's Budget reduces the $2.4 Billion authorization to a $1.5 Billion appropriation level. Due to this reduction, the following community projects would not be funded.

STATE	PROJECT	CONGRESSIONAL DISTRICT
Alabama	Hartford	2
	Montgomery	2
	Weaver	3
	Millbrook	3
	Lincoln	3
	Cedar Bluff	4
	Hokes Bluff	4
	Reform	4
	Jefferson County #1	6
	Jefferson County #2	6
Alaska	UNABLE TO DETERMINE AT THIS TIME	
Arizona	Apache Junction	1,5
	City of Phoenix, 91st Ave. Plant	2
	City of Phoenix, 23rd Ave. Plant	2
	Pima County Release Sewer	2
	Pima County Regional Expansion	2
	Jerome	3
	Kingman	3
	Flagstaff	3
Arkansas	UNABLE TO DETERMINE AT THIS TIME	
Colorado	Town of Lyons	2
	Town of Georgetown	2
	Town of Collbran	3
	Town of Nucla	3
	Town of Dolores	3
	Town of Saguache	3
	Town of San Luis	3
	Town of Sanford	3
	Town of Ouray	3
	Costilla County Wastewater Treatment Plant	3
	Town of Ridgeway	3
	Town of Redcliff	3
	Town of Romeo	3
	Town of Alma	3
	Town of Crested Butte	3
	Town of Manassa	3
	City of Yampa	3
	St. Charles Mesa Sewer District	3
	Town of Crawford	3
	Town of Norwood	3
	City of Trinidad	4
	Town of Wray	4
	City of Rocky Ford	4
	Town of Wellington	4
	City of Ft. Lupton	4

(Colorado, cont.)

	Hi-Land Acres	4
	Town of Flagler	4
	Town of Seibert	4
	Town of Ovid	4
	Mountain Range Shadows HA	4
	Divide Wastewater Sewer District	5
	Buena Vista Sewer District	5
	Central Clear Creek Sewer District	5
	Mountain Wastewater Sewer District	5
	St. Mary's Glacier	5
	Cottonwood Sewer District	5
	Perry Park Wastewater Sewer District	5
	Willowbrook Wastewater Sewer District	5
	Town of Cripple Creek	5
	Town of Simla	5
Connecticut	Hebron	1
	Norwich	2
	East Lyme	2
	New Haven	3
	Bridgeport	4
	Cheshire	5
Delaware	Dagsboro-Frankfort	1
Florida	City of S. Daytona	4
	City of Tampa	7
	City of Dunedin	9
	City of St. Cloud	11
	Metropolitan Dade County	16,17,18,19
Georgia	Savannah (President Street)	1
	Albany (Coolewahee)	2
	Albany (Rehab.)	2
	Valdosta	2
	Thomaston	3
	Perry	3
	Fulton (Chattahoochee III)	5
	Griffin (Crestview)	6
	Fayetteville	6
	Summerville	7
	Macon (Rocky Creek Phase 2b)	8
	Waycross	8
	Calhoun	9
	Dalton (Standby Generator)	9
	Augusta (Flow Equalization)	10
	Augusta (Outfall)	10
	Winder	10
Idaho	Rathdrum (New Secondary)	1
	Bayview (New Secondary)	1
	Malad (Upgrade)	2
	Idaho Falls (South Interception)	2
Iowa	Iowa City	3
	Des Moines	4
	Decator City	5

Illinois	Metropolitan Sanitary District of Greater Chicago (Tunnel and Reservoir Program)	5,6,7,8,11,13
Kansas	Eudora	2
	Holton	2
	Johnson County (Mission and Turkey)	3
	Johnson County (Indian Creek)	3
	Olpe	5
Kentucky	Mayfield	1
	Louisville/Morris Foreman	3
	Manchester	5
	Lexington Town Branch	6
	Millersburg	6
Maine	Kennebunkport	1
	Owl Head	1
	Norway	2
	Mars Hill	2
Maryland	Baltimore Back River Advanced Wastewater Treatment	2,3,6,7
Massachusetts	Milford	3
	MA Water Resources Authority	9
	Fairhaven	10
	Abington	11
	Braintree	11
Michigan	Grants Loss	
	Detroit	1,13,14
	Leslie	6
	Dryden	7
	Genesee County	7
	Benzie County	9
	Clare	10
	Rogers City	11
	Monroe County Luna Pier	16
	Grosse Ile	16
	Loan Loss	
	Morenci	2
	Battle Creek	3
	Bronson	4
	Union City	4
	Hamburg Township	6
	Perry	6
	Genoa Township	6
	Au Gres	8
	Saginaw County Buena Vista Township	8
	Greenville	9
	Bingham Township, Clinton County	10
	Reed City	10
	Marine City	12
	Rochester	18

Minnesota	Ostrander	1
	Kenyon	1
	Mantorville	1
	Adrian	2
	Watson	2
	Balaton	2
	Watson	2
	Browerville	7
	Holdingford	7
	Pilager	8
	Stacy	8
	Ogilvie	8
	Orr	8
	Longville	8
	Aitkin	8
Mississippi	Pontotoc	1
	Charleston	1
	DeKalb	3
	Gulf coast Regional Wastewater Authority	5
Missouri	St. Louis Metropolitan Sewer District	1,2
	Kansas City	5
	Taney County	7
	Springfield	7
Montana	UNABLE TO DETERMINE AT THIS TIME	
Nebraska	Western	1
	Fairmont	1
	McCool Junction	1
	Roca	1
	Hartington	1
	Douglas County SID #206	2
	Ainsworth	3
	Crawford	3
	Scottsbluff	3
	Lexington	3
Nevada	City of Henderson	1
	Douglas County Sewer Impvmt.	2
New Jersey	Lower Township MUA	2
	Atlantic County UA	2
	Burrough of Oradell	5
	Oakland Burrough #1	5
	Oakland Burrough #2	5
	Rahway Valley SA	6
	Bayshore RSA	3,4,6
	Warren County - Paulinskil	12
	Also, 205(j)	
	Navesink River NPS Control Project	
	Coastal Water Quality Mgmt. Program	
New Mexico	UNABLE TO DETERMINE AT THIS TIME	
New York	Westchester	20
	Alexandria	26

North Dakota	Bismarck	1
	Minot	1
Ohio	Latty	5
	Rushville	10
	Rittman	13,16
Oklahoma	Tahlequah	2
	Shawnee	3
	Hugo	3
Oregon	UNABLE TO DETERMINE AT THIS TIME	
Pennsylvania	Bridgewater Township, Susquehanna County	10
	Thompson Borough, Susquehanna County	10
	Shenango Township, Mercer County	21
South Carolina	Dorchester County	1
	City of Aiken	3
	City of Florence	6
	Bennettsville	6
Tennessee	Knoxville	2
	Sweetwater	2
	East Ridge	3
	Redbank	3
	Sneedville	4
	Pulaski	4
	Decherd	4
	Pikeville	4
	Nashville	5
	Smithville	6
	Cookville	6
	Lebanon	6
	Waynesboro	7
	Linden	7
	Moscow	7
	Trenton	8
	Union City	8
	Halls	8
Utah	Providence	1
	Ivins	1
Vermont	City of Burlington - Combined Sewer Overflow Project	1
Virginia [Potentially Impacted]	Hampton Roads Sewer District Commission/Lamberts Point	2
	City of Richmond	3
	City of Franklin	4
	Amelia County Lagoon	4
	Town of Crewe	4
	City of Emporia	4
	Town of Jarratt	4
	Prince George County Rivers Edge Lagoon	4
	Town of Wakefield	4
	Town of Brookneal Falling River Lagoon	5

(Virginia, cont.)	Town of Brookneal Staunton River Lagoon	5
	Nelson County Schuyler Sewer District	5
	Town of Chase City	5
	Town of Clarksville	5
	Town of Dillwyn	5
	Town of Drakes Branch	5
	Town of Farmville	5
	Town of Lacrosse	5
	Town of Victoria	5
	Town of South Hill	5
	Town of Appomattox	5
	Augusta County-Hairston East	6
	Alleghany County-Selma	6
	Alleghany County-Cliftondale Park	6
	Alleghany County-Clearwater Park	6
	Town of Eagle Rock	6
	City of Covington	6
	Ashwood Healing Springs Sewer District Commission	6
	Bath County Sewer Authority-Bacova STP	6
	Town of Broadway	6
	Town of Buena Vista	6
	Town of Elkton	6
	Town of Glasgow	6
	Town of Monterey	6
	Town of Timberville	6
	Warm Springs Sewer District Commission	6
	City of Waynesboro	6
	Town of Orange	7
	Rapidan Service Authority Gordonsville	7
	Spotsylvania County-Courthouse Lagoon	7
	Spotsylvania Count-Thornburg Lagoon	7
	Town of Berryville	7
	Town of Edinburg	7
	Frederick County Sewer Authority-Stephens Run	7
	Town of Louisa	7
	Town of Middletown	7
	Rapidan Sewer Authority-Standardsville	7
	Rivanna Water and Sewer Auth. Moores Creek STP	7
	Rivanna Water and Sewer Auth. Scottsville Lagoon	7
	Town of Shenandoah	7
	Town of Woodstock	7
	Town of New Castle	9
	Town of Pearisburg	9
	Town of Rich Creek	9
	Town of Pennington Gap	9
	Tazewell County Water and Sewer Authority	9
Washington	UNABLE TO DETERMINE AT THIS TIME. ALL PROJECTS NOT FUNDED WILL BE IN PUGET SOUND AREA.	
West Virginia	4 NMP PROJECTS TOTALLING $14 MILLION	
Wisconsin	Milwaukee Metropolitan Sewer District	
Wyoming	UNABLE TO DETERMINE AT THIS TIME	

STATEMENT OF ROLAND GEDDES, NATIONAL ASSOCIATION OF STATE CONSERVATION ADMINISTRATORS

ACCOMPANIED BY ROSEMARY ROSWELL, ADMINISTRATOR, MARYLAND STATE CONSERVATION ADMINISTRATION

NONPOINT SOURCE PROBLEMS

Senator PROXMIRE. We will now hear from Mr. Roland Geddes from the Virginia Department of Conservation of Soil and Water Conservation representing the National Association of State Conservation Administrators. Mr. Geddes is accompanied by Rosemary Roswell, administrator of the Maryland State Conservation Administration.

Go right ahead, sir.

Mr. GEDDES. Thank you, Mr. Chairman. Our association asked us to come and ask you to support adequate funding for section 319 of the Clean Water Act, the nonpoint source pollution provisions. This section, a new section, requires that each state conduct an assessment of its nonpoint source problems by April of this year—most of us have finished that now—and to prepare a plan of how we are going to address these nonpoint source problems which have not been addressed in the past by August 4 of this year. We are on track in Virginia with ours, and I think most of the other states are.

Studies by EPA of the Chesapeake Bay, the Great Lakes, and across the country indicate the necessity of nonpoint source pollution control programs if we are really going to accomplish the objectives of the Clean Water Act. We cannot do this with point source controls alone.

Section 319, as passed in 1987, authorized a total of $400 million for matching grants to states to implement nonpoint source control programs. So far, nothing has been appropriated. There is nothing in the 1989 budget from the President.

We believe that this appropriation is really needed, at least a part of it, to stimulate the state governments to provide the 40-percent state match required by grants under section 319. In fact, many states, including my own state of Virginia, has already appropriated funds for this match in anticipation of these federal appropriations.

We also believe that the failure to appropriate at least a part of the authorized funding sends a signal to the states that Congress does not really consider nonpoint source programs as vital to the protection of our water quality.

Therefore, the agencies represented by the National Association of State Conservation Administrators are ready to begin full implementation of the nonpoint source programs called for in the Clean Water Act. Our association, therefore, respectfully requests that you appropriate at least a part of the $100 million authorized for the implementation of section 319 of the Clean Water Act in 1989. Thank you, sir.

Senator PROXMIRE. Thank you, sir.

[The statement follows:]

STATEMENT OF ROLAND B. GEDDES, DIRECTOR OF VIRGINIA DIVISION, SOIL AND WATER CONSERVATION, ON BEHALF OF THE NATIONAL ASSOCIATION OF STATE CONSERVATION ADMINISTRATORS

Good morning Mr. Chairman and members of the committee. I am Roland B. Geddes, Director of the Virginia Division of Soil and Water Conservation. Rosemary Roswell and I are here this morning representing the National Association of State Conservation Administrators, an organization of the directors of state soil and water conservation agencies. Our association requests that you appropriate funds as authorized for support of Section 319 of Public Law 100-1, the 1987 revision to the Clean Water Act. This Section requires that each state make an assessment of waters impacted by nonpoint source related pollution and develop management plans to address the problems identified in the assessment from pollutants such as sediment, nutrients and pesticides from agricultural runoff, animal waste from feed lot and poultry operations, oil, lead, zinc and other chemicals from city streets and parking lots and sediment from construction sites or logging operations. Most states, including Virginia have completed their assessments which are due this month and expect to complete their management plans by the required date of August 4, 1988.

A recent EPA report states, "Nonpoint sources (such as runoff from agricultural areas) are reported as the leading cause of failure to support uses in the Nation's lakes, streams, and estuaries. Seventy-six percent of impaired lake acres, 65 percent of impaired stream miles, and 45 percent of impaired estuarine square miles are affected by nonpoint sources."

Studies of the Chesapeake Bay, the Great Lakes and other waters of United States indicate the necessity of nonpoint source controls in any major water quality improvement program. The 1987 ammendment to the Clean Water Act recognizes that cost effective water quality improvement programs must address nonpoint source pollution and not rely solely on point source controls.

Section 319 (h) of the law authorizes the appropriation of $400 million over a four year period for grants to states for nonpoint source pollution control programs. Although $70 million was authorized for fiscal year 1988, no funds were appropriated. Our association respectfully requests Congress to appropriate the $100 million authorized for FY 1989.

We believe this appropriation would stimulate the state governments to provide the 40% state match required for grants under Section 319 (h). In fact, some states, including Virginia have already appropriated funds to match anticipated federal appropriations. The combined funds would enable the timely implementation of nonpoint source pollution control programs identified in the management plan. We also believe the failure to appropriate at least a part of the authorized funding sends a signal to the states that Congress does not consider nonpoint source programs as vital to the protection of our water quality.

This law also prohibits any funds appropriated under Section 319 to be used as cost-share to individuals for installation of Best Management Practices. The guidance developed by EPA also prohibits the use of state dollars for best management practices cost-sharing to be used as match for Section 319 grants. Most state nonpoint source programs related to agriculture rely upon a balanced program of education, technical assistance to the farmer and finally financial incentives for the installation of Best Management Practices. While we have no problem with the requirement that federal funds appropriated under 319 not be used for agricultural cost share, we do request that states be allowed to use their BMP cost-share funds to meet the 40 percent match requirement.

Agencies represented by the National Association of State Conservation Administrators and cooperating state agencies across the country are ready to begin full implementation of comprehensive nonpoint pollution control programs as soon as funding is made available.

Our association therefore respectfully requests that you appropriate the $100 million authorized for the implementation of Section 319 (h) of the Clean Water Act and that states be allowed to use their cost share funds for Best Management Practices to meet the 40 percent match requirement. Thank you.

STATEMENT OF ROBERT M. KRILL, ASSOCIATION OF STATE DRINKING WATER ADMINISTRATORS

Senator Proxmire. Mr. Krill is our next witness. He is vice president of the Association of State Drinking Water Administrators.

Mr. Krill. Thank you, Senator. Mt name is Bob Krill. I am the director of the Bureau of Water Supply with the Wisconsin Department of Natural Resources and, as you noted, vice president of the Association of State Drinking Water Administrators.

I would like to echo Mr. Theiler's compliments to you for your long tenure in the Senate and also indicate we are going to miss you in Wisconsin.

I am here today representing the association, which is the professional organization that represents state drinking water regulatory agencies. Those are the agencies that are responsible for implementation of the Safe Drinking Water Act.

RESPONSIBILITY FOR PUBLIC WATER SUPPLIES

These agencies are responsible for approximately 206,000 public water supplies across the country serving nearly 220 million people. Over the years, the states have made tremendous progress in assuring public health protection in our drinking water supplies, but the job is far from finished. The Centers for Disease Control report thousands of people still get sick from drinking unsafe water, and every day we read in the newspapers about some supply contaminated by chemicals.

Two years ago, the Congress passed the 1986 Amendments to the Safe Drinking Water Act in response to public concerns with the safety of drinking water. That legislation set forth an aggressive agenda to control toxic chemicals and improve microbiological safety.

Unfortunately, Congress did not match the agenda with the funds needed to carry out the program. Our association has estimated, based on current information, a need for an additional $80 million per year by 1992. State legislatures will not provide this money, at least not all of it.

A common question asked by state legislators is, "How much money has the federal government put into this program? What additional resources can we expect from EPA to carry out this job?"

FEDERAL SUPPORT LACKING

Congress needs to show it is interested in achieving the goals of the 1986 Amendments by providing increased support to state regulatory agmncies. Our association is requesting this year an additional $15 million for fiscal year 1989 for the Public Water Supply Supervision Program to begin implementation of this program.

When comparing our request to the dollars provided to other environmental protection programs, you will note that in relationship to the numbers of systems regulated, the program grants to the Safe Drinking Water Act are at the very low end of the scale. Yet this program is one which has a direct impact on the health of all of the people in this country served by public water systems.

Last year, Senator, we testified before you and you were very instrumental in adding an additional $5 million to the appropriation. However, that was cut in the final countdown in December and, as a result, we did not get that increased money.

We hope we can obtain your support again this year for the increases that we seek. Thank you.

Senator PROXMIRE. There is nothing more important than drinking water and clean water except maybe drinking Wisconsin beer. [Laughter.]

[The statement follows:]

STATEMENT OF ROBERT M. KRILL, VICE PRESIDENT, ASSOCIATION OF STATE DRINKING WATER ADMINISTRATORS

I. INTRODUCTION

The Association of State Drinking Water Administrators (ASDWA) appreciates the opportunity to present this testimony to the Subcommittee. As the professional organization which represents State Drinking Water Regulatory Agencies at the national level, ASDWA's primary mission is the protection of public health through effective and efficient management of state water supply programs and implementation of the Safe Drinking Water Act Amendments (SDWA). To accomplish this mission, the Association has been providing vital communication, coordination, and information transfer services between state programs and EPA, the Congress, and other national organizations since its inception in 1984. State drinking water programs regulate approximately 206,000 public water supplies nationwide serving 219 million people. All 57 states and territories are members of ASDWA; 36 states currently pay dues while 47 states and territories actively support the Association through participation in various ASDWA activities.

II. THE LEVEL OF RESOURCES NEEDED FROM CONGRESS

In 1986 each member of Congress unanimously voted for significant amendments to the Safe Drinking Water Act which set into motion an extremely aggressive and wide sweeping agenda that is changing the nation's program of providing safe drinking water. Through this testimony, ASDWA wishes to convey the urgent and unanimous conviction of state drinking water program administrators that the states' ability to effectively carry out increasing statutory and regulatory responsibilities established under the SDWA Amendments will depend directly on the level of budgetary resources that Congress appropriates.

In FY-88, this Subcommittee approved a $5 million increase over the Administration's request of $33.45 million. Unfortunately, the $5 million was a casualty of the final round of budget cutting. Many of our member states were impacted substantially by not getting these additional funds. We trust that this Subcommittee and its House counterpart will again look favorably upon public water system supervision (PWSS) grants and that whatever is added will not be cut at a later date.

It is ASDWA's strong belief that, in order to adequately meet increasing responsibilities, the level of funding for (PWSS) grants must be increased from its current level of $33.45 million in FY-88 to at least $90 million by FY-92. This will require an increase of $15 million in FY-89 and in each of the three subsequent fiscal years. We also request that the $10 million authorized (under section 1442(g) of the SDWA Amendments) for technical assistance to small water systems be appropriated. With these added funds, and corresponding increases in the states' share of PWSS program budgets, state primacy agencies can continue to ensure the safety of the nation's public water supplies. The rationale for this request is explained in greater detail in Section VI.

ASDWA also supports the funding request of the National Rural Water Association (NRWA). Many ASDWA members work closely with NRWA chapters. NRWA's efforts are of great assistance since current funding levels do not allow full coverage by state field personnel of small community and non-community systems.

ASDWA requests this substantial increase in appropriations while fully cognizant of the two year budget accord between the Administration and the Congress coupled with the pressure to achieve Gramm-Rudman-Hollings targets. Safe drinking water is essential to human health. Public demands for safe drinking water resulted in Congressional enactment of the Safe Drinking Water Act Amendments in 1986. To achieve this national goal of safe drinking water, it is incumbent upon Congress to support its own legislation by paying its 75 percent share of the additional costs for state drinking water programs to implement the '86 Amendments.

III. EFFECTIVE DRINKING WATER PROGRAMS -- THEY PROTECT THE HEALTH OF PEOPLE

The relationship between drinking water quality and other environmental protection programs has become increasingly apparent in recent years. Although hazardous waste and toxic substances receive greater media attention than drinking water, a primary goal of remediation at waste disposal sites and of limitations on pollutant discharges is to protect drinking water sources. Moreover, drinking water program resources are almost always required to augment remediation efforts associated with Superfund and RCRA efforts.

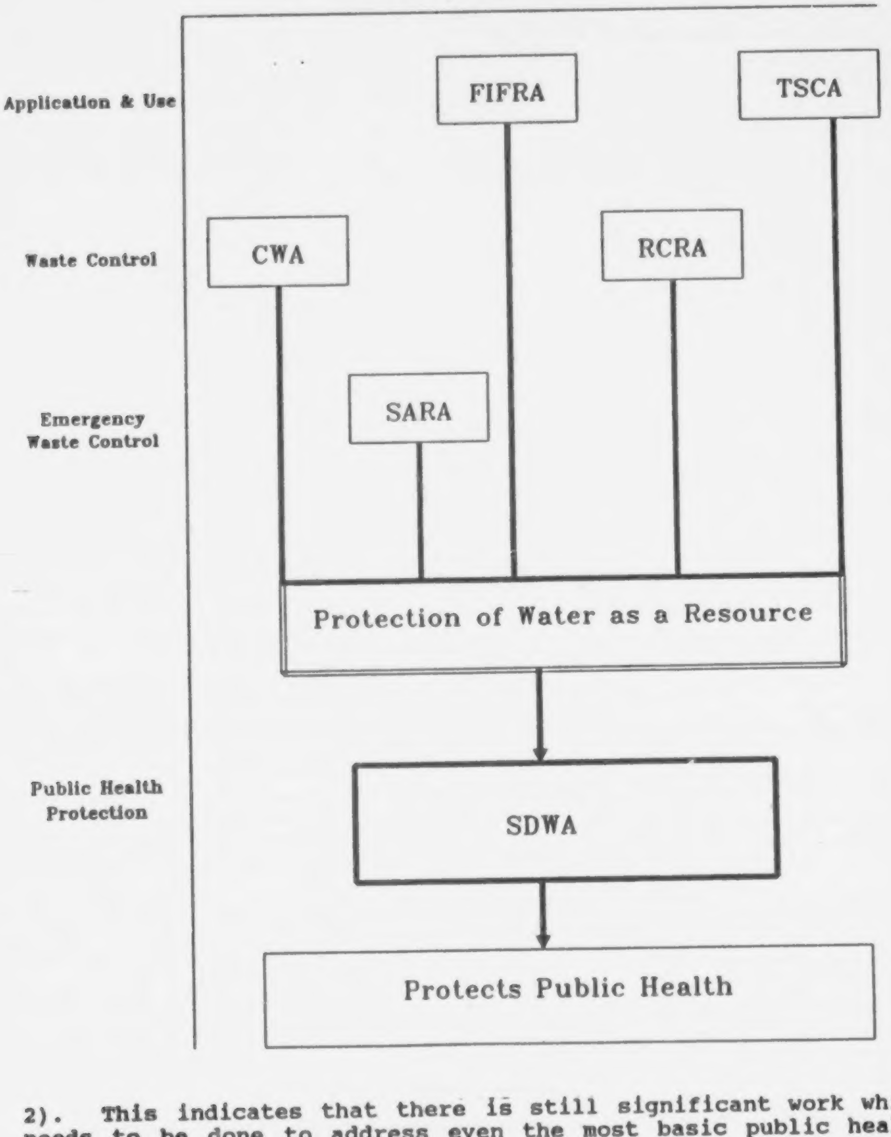
Figure 1 illustrates the relationship between environmental programs, the Safe Drinking Water Act, and public health protection. The Clean Water Act, SARA, RCRA, and FIFRA were designed primarily to protect water as a resource. Only the Safe Drinking Water Act protects people directly against toxic or other contaminants. It is indeed ironic that the nation is willing to spend billions of dollars annually to clean up abandoned waste sites when EPA studies have shown that the number of persons exposed to Superfund sites numbers only in the thousands. By contrast, public water systems serve more than 219 million persons, all of whom are potentially exposed to one or more drinking water contaminants.

Even though drinking water is the "last line of defense" to protect children and other sensitive populations from lead, synthetic organic chemicals, radon, and microbiological contaminants, the resources expended on drinking water are extremely small relative to other "environmental" programs. The nation has expended approximately $50 billion on the construction of waste treatment facilties over the past 15 years and another $10-20 billion is being spent to clean up abandoned waste sites. Some of the groundwater protection bills that have been introduced recently have contained large authorizations (totalling in the hundreds of millions of dollars) for research into groundwater problems. ASDWA has provided testimony to the effect that Federal expenditures of several hundred million on groundwater research seems out of proportion when the Federal government is willing to appropriate only $33 million for direct public health protection achieved through effective state drinking water programs.

IV. FALLING THROUGH THE SAFETY NET

Despite the importance of safe drinking water to human health, the responsibilities of state drinking water agencies far exceed operating budgets. As a result, activities have been prioritized and in some cases, public health protection compromised. Since 1974, the number of reported waterborne disease outbreaks attributed to public water supplies has increased significantly. Between 1963 and 1982, at least 495 outbreaks of waterborne disease occurred in public water systems (see Figure

Figure 1
Public Health Protection
Safety Net


Application & Use
Waste Control
Emergency Waste Control
Public Health Protection
FIFRA
TSCA
CWA
RCRA
SARA
Protection of Water as a Resource
SDWA
Protects Public Health

2). This indicates that there is still significant work which needs to be done to address even the most basic public health problems associated with water supply.

As new regulations are promulgated under the Safe Drinking Water Act Amendments, the states fear that the so-called "glamour contaminants" -- lead, radon, and volatile and synthetic organic chemicals -- and large systems will command the majority of both their attention and resources. This will mean that less attention and resources will be available to assist small community systems (e.g., trailer parks, homeowners associations, and rural systems) and non-community systems (e.g., schools, day care centers, camps, churches, etc.).

Preventive practices, such as technical assistance, operator training, sanitary surveys, and administrative oversight tend to suffer when resources are scarce, especially in small community water systems and non-community water systems. Ironically, these are the systems that require the most attention since they account for the vast majority of maximum contaminant level (MCL) violations. In a 1987 report, the National Council on Public Works Improvement found that "many small water systems, as currently managed and operated, constitute a significant threat to public health."[1]

Unless adequate resources are made available to state programs, the new regulatory mandates embodied in the SDWA Amendments will only serve to exacerbate this situation. As more regulations are promulgated, it will be the small, rural systems, often ill-managed and serving low income, fixed income populations, that will fall through the "public health protection safety net."

V. THE IMPORTANCE OF DRINKING WATER TO THE PUBLIC

Studies by various groups during the past two years have underscored the fact that protection of drinking water is a real concern at all levels of government and to the consumer. For example, a recent survey conducted by the League of Women Voters revealed that "the protection of drinking water supplies is the number one local environmental concern [for League] members."[2] A survey of state health officers conducted by the Association of State and Territorial Health Officials in April, 1987 ranked drinking water contamination as the most important of 27 environmental issues confronting states.

The public has spoken and now it is time for the Congress to respond with more than just legislation. The Congress must support its own legislation with sufficient appropriations to ensure that the law is implemented in a way that will protect the more than 219 million people served by public water systems. That is the clear message being sent to the legislative branch by the public.

VI. COSTS OF IMPLEMENTING THE SAFE DRINKING WATER ACT AMENDMENTS OF 1986 -- AND WHO WILL PAY

Under Section 1443 of the Safe Drinking Water Act of 1974, the Federal government agreed to pay "up to 75 per centum of the grant recipient's costs ... in carrying out ... a public water system supervision program." The historical interpretation of this section by both EPA and the states is that the Federal government, as a quid pro quo for the states' acceptance of primary enforcement responsibility (primacy) under the law, would pay 75 percent of total PWSS program costs and that the states would provide a matching 25 percent share.

The arrangement has not worked the way it was envisioned, however. Both ASDWA and EPA data show (see Figure 3) that the states now pay substantially more than 50 percent of total program costs nationwide. In FY-86, for example, total program expenditures for all states amounted to about $77.2 million. The Federal contribution directly to the states was about $26.5 million, or about 34.3 percent of total outlays.

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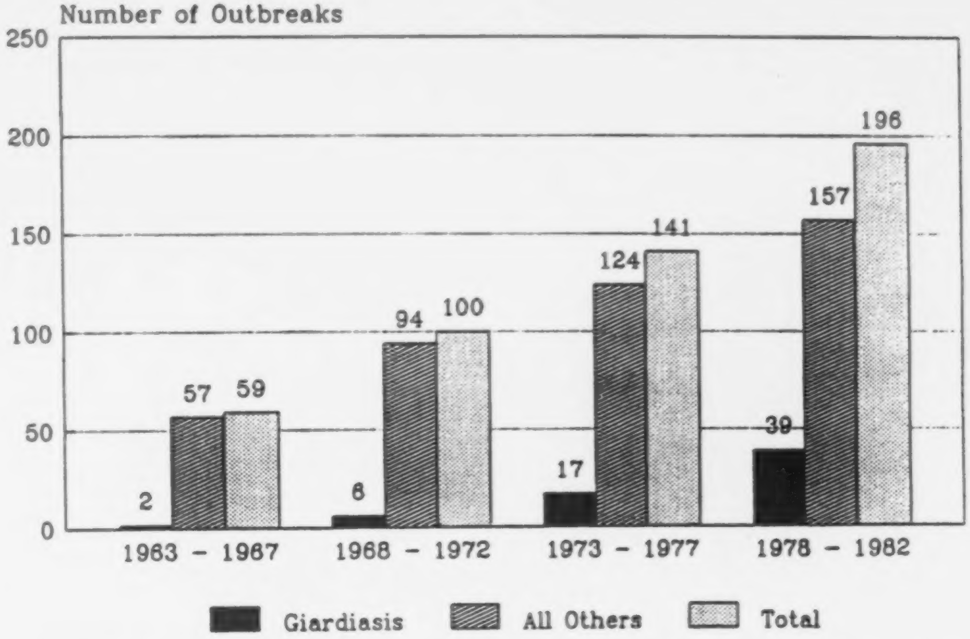
[1] Wade Miller Associates, Inc. 1987. Infrastructure Policy Issues in Water Supply for The National Council on Public Works Improvement, Washington, D.C. p. IX-8.

[2] News Release, League of Women Voters Education Fund, March 1, 1988

Figure 2

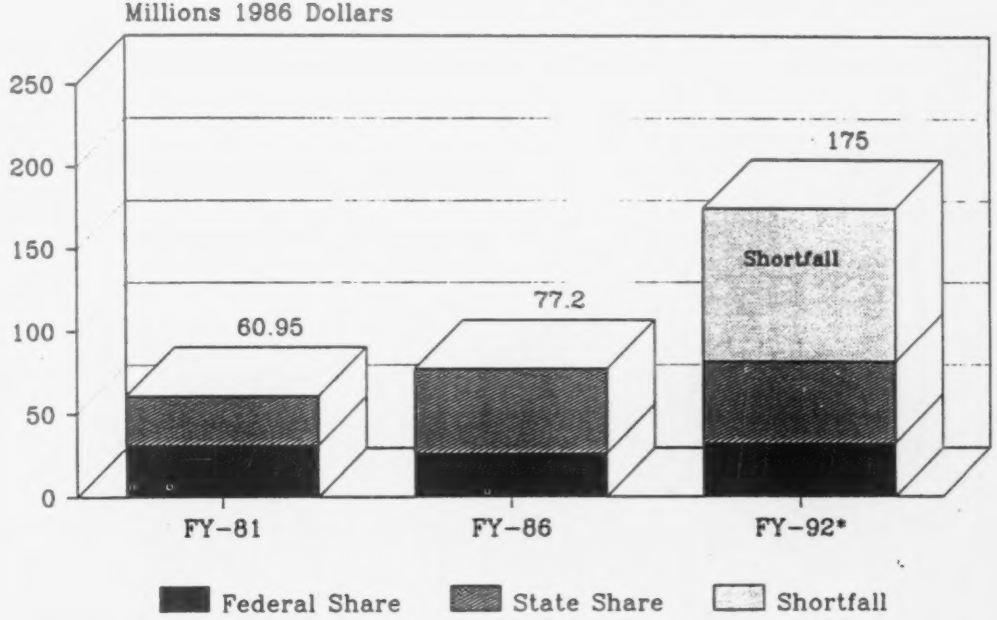
WATERBORNE DISEASES
In Public Water Supplies



Source: Logsdon, G.S. and E.C. Lippy. 1984. Environmental Engineering. Proc. of the 1984 Specialty Conference.

Figure 3

STATE DRINKING WATER BUDGETS
Large Shortfall Projected
for Early 1990s



* Projection: assumes no increases in state or Federal appropriations from FY-88 levels.

With the enactment of the Safe Drinking Water Act Amendments of 1986, Congress specified 83 contaminants for which EPA must establish maximum contaminant levels. Congress also required EPA to develop a rule specifying the conditions under which untreated surface supplies must filter their water, and a rule that will require all public water systems to install disinfection.

In 1986, ASDWA presented testimony to this Subcommittee which estimated the additional costs of implementing the Safe Drinking Water Act Amendments at the state level to be in the range of $44-60 million annually. This number was based on several studies conducted by EPA coupled with historical experience of running state programs. The $44-60 million number was developed prior to the enactment of the 1986 Amendments. In 1987, ASDWA testified before the Subcommittee again and presented the results of an internally funded Resource Needs study. Results of that study estimated state program costs for implementing only two sets of regulations -- the Surface Water Treatment Rule and volatile organic chemicals regulations -- at $21 million annually over the next five years. In addition, ASDWA estimated that reclassification of three categories of non-community systems as community systems would cost an additional $9-12 million annually.

Almost two years have elapsed since the SDWA Amendments were enacted and the true costs of implementing the regulations mandated by Congress as part of this legislation are becoming quantifiable. Although EPA still has not promulgated the majority of the rules, a sufficient number have been developed to allow a determination of state implementation costs. ASDWA currently is working with the EPA's Office of Drinking Water on a joint study to estimate state implementation costs. Preliminary estimates show that the total cost of implementing the SDWA will be in the range of $150-200 million annually over the next decade. These numbers are significantly higher than previous estimates -- and we believe they are significantly more accurate.

With current state and Federal outlays in the $75-85 million range, these cost figures clearly show that only about 40-50 percent of the resources necessary to carry out Congressional mandates are available to state drinking water programs. Figure 3 shows a projected shortfall by 1991-1992 of approximately $90-95 million. Clearly, this shortfall in program resources assures that Congressional objectives of improved public health protection will not be achieved and violations in public water systems will increase significantly.

The key question now being asked by the states is, "Who will pay for the additional $75 to $120 million needed for the states to do their jobs under the SDWA?" The reality of the situation says that it will not be the states. States already are paying for 60 percent of the program; governors and state legislators are not likely to appropriate funds to carry out the plethora of complex and administratively burdensome regulations currently being developed by EPA.

One of the findings of a report on state drinking water programs prepared by EPA's Office of Management Systems and Evaluation in May, 1987 reinforces this assertion: "State legislatures are becoming increasingly reluctant to fund more Federal activities without a corresponding increase in Federal dollars. Without additional state or Federal funds, EPA will have difficulty convincing some states to carry out the extra activities required by [the Safe Drinking Water Act] Amendments."[3] The report went on to say that "the states are angry that EPA is trying to control 100 percent of their programs, but is paying for only a portion of them."

The Relationship between Resources and Primacy

As indicated in the EPA report mentioned above, state frustration is growing. Although virtually all states are supportive of the goals of the SDWA, the states are very concerned with regulations under development by EPA's Office of Drinking Water. Each set of regulations being developed contains a plethora of requirements and responsibilities which the states must carry out to maintain primacy. Many of these provisions--such as the additional monitoring required of small systems under the proposed Total Coliform Rule and the provisions of the revised rule to control lead contamination -- are extremely burdensome in terms of cost.

As a result of EPA's primacy directives, state drinking water programs have shifted in emphasis over the past few years from being preventive in nature to simply reacting to problems. Considerable emphasis is now placed on the numbers embodied in the functions of compliance monitoring, data management, and enforcement. The complexity of the regulations being developed is perhaps necessary in order for the states to assure EPA that the public health is being protected adequately so that the EPA in turn can assure Congress that its mandates are being carried out. States are convinced, however, that a program "by the numbers" is not the most effective way of protecting the public health. State staff persons have been taken out of the field where they heretofore provided badly needed training and technical assistance to thousands of small water systems.

State officials often get asked, "Are you considering giving primacy back to EPA?" Looking into the future, there is a high probability that several states will relinquish primacy to the EPA -- but in most cases it will not be a decision made by those states, but rather by the EPA. There is growing sentiment, however, that states would rather relinquish primacy than give up further control over their programs.

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ASDWA appreciates the opportunity to present its views to the Subcommittee. The Association also appreciates the Subcommittee's consideration of our funding requests.

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[3] State Programs in Public Water System Supervision (PWSS), Program Evaluation Division, Office of Management Systems and Evaluation, Environmental Protection Agency, May 1987.

STATEMENT OF JEFF SCHLEGEL, WISCONSIN RURAL WATERWORKS ASSOCIATION

RURAL WATER TRAINING AND TECHNICAL ASSISTANCE PROGRAM

Senator PROXMIRE. Our next witness is Jeff Schlegel, Wisconsin Rural Waterworks Association.

Mr. SCHLEGEL. As you mentioned my name is Jeff Schlegel, and I am the president of the Wisconsin Rural Waterworks Association. I am here on behalf of Wisconsin Rural Water Association and the National Rural Waterworks Association to thank you and this committee for the support you have given the Rural Water Training and Technical Assistance Program in the past and to request your continued support for the program in the Environmental Protection Agency fiscal year 1989 budget.

I want to particularly thank you, Mr. Chairman, for increasing the funding last year which enabled Wisconsin to start its program as a new state under the National Rural Water Association. Over the past few years, representatives from a number of states and NRWA have come to this committee to request your support to continue this program.

We have emphasized three points: The first is that the primary noncompliance problems under the Safe Drinking Water Act are among the small systems in rural areas.

The second is that there is a very effective way to improve compliance among these small systems with a peer-oriented, grass-roots training and technical assistance program.

Finally, we have requested that this committee and the Congress provide funding for the operation of the program. Our testimony this year reemphasizes these same points. After passage of the Federal Safe Drinking Water Act in 1974, the entire nature of providing drinking water in rural areas changed. Up to that time, practically every small water system was an improvement over poor quality water wells or the daily hauling of water.

However, it became clear to small systems through EPA that there would be a national uniform approach to improving the quality of drinking water, and water quality would be as important as water supply. This year, the EPA has the responsibility to increase the number of contaminants to be tested to 83.

TESTING PROVING BURDENSOME

One of the major problems we have had in the past has been effectively carrying out the limited testing already placed on small systems. Now these systems must conduct more in costing of tests and in many cases, pay for new filtration and other water system improvements.

When you ask small water systems to assume this burden, we believe that you need to provide some hands-on assistance to support this transition. The rural water training and technical assistance program does exactly that. Every rural water system in the state is 4 hours away from end person assistance to help work out its problems in meeting new SDWA standards.

ACCOMPLISHMENTS CITED

While it is clear that new costs may be standard for some small systems, we are working closely throughout these systems to meet federal requirements. Our accomplishments in Wisconsin this year have far exceeded our expectations. Over the first 11 months of the program, we have had 398 small water system operators and other personnel attend our training sessions. These individuals came from 228 different water systems in the state.

In addition, we have been able to make 317 on-site technical assistance visits. Our activities have included helping to resolve the reading of the nitrate problems in small systems as well as to reduce costly water loss and to better treat for iron and manganese in the water systems.

With the inception of the increased EPA requirements for filtration, lead, radon, and other newly identified contaminants, our small systems would be floundering without this help. As an operator of a small water system, I thank you for your help last year in continuing our program.

We believe we have spent this money very effectively, and there are other states that have asked to join this program. In particular, New Jersey, Maryland, Delaware, Washington State, and they are requesting some additional funding to cover these states. With the new pressures from EPA, a grass roots technical assistance program is needed in all parts of the country.

Again, thank you for your help, and we urge you to continue our program. Thank you.

Senator PROXMIRE. Thank you, Mr. Schlegel.

I want to thank you ladies and gentlemen, very, very much for your excellent testimony. It is very helpful. We will certainly do all we can to help. You understand the tremendous fiscal pressure we are under to hold down spending everywhere with the enormous deficit we are running. Thank you very, very much.

[The statement follows:]

STATEMENT OF JEFF SCHLEGEL, PRESIDENT, WISCONSIN RURAL WATER ASSOCIATION

Mr. Chairman, my name is Jeff Schlegel and I am the President of the Wisconsin Rural Water Association and a designated Board Member of the National Rural Water Association (NRWA). I am here on behalf of NRWA to thank you and this Committee for the support you have given the rural water training and technical assistance program in the past and to request your continued support for the program in the Environmental Protection Agency FY 1989 budget.

Wisconsin started its program one year ago. We were able to begin a program because of the additional funding provided by the Appropriations Committee. I want to thank you and the other members of the Committee for making these funds available.

Our accomplishments this year have far exceeded our expectations. Over the first eleven months of the program we have had 398 small water system operators and other personnel attend our training sessions. These individuals came from 228 different water systems in the state. In addition, we have been able to make 317 on-site technical assistance visits. Our activities have included helping to resolve the radium and nitrate problems in small systems as well as to reduce costly water loss and to better treat for iron and manganese in the water systems. With the inception of the increased EPA requirements for filtration, lead, radon and other newly identified contaminants, our small systems would be floundering without this help.

As important as this accomplishment has been, the even greater accomplishment is that we have established a base for long-term assistance to our small water systems in the future. Most environmental problems - acid rain, hazardous waste, sewage treatment, etc. - eventually affect drinking water. Many of our small systems are not prepared to deal with the plethora of EPA rules that must be implemented over the next few years. With our Wisconsin Rural Water Association, we will be able to work together to improve the operating capability of our small systems and to move toward strong compliance with the SDWA.

This special help could not have come at a more critical time. Small systems are coming under rapidly increasing regulatory scrutiny. Last year EPA initiated its programs to list 83 new contaminants to be covered under the SDWA and published initial regulations on contaminant levels in drinking water, coliform monitoring and expanded water filtration requirements. The major brunt of the cost to meet these proposals was placed on small water systems. In anticipation of this and in cooperation with EPA, the NRWA state training and technical assistance programs have rapidly expanded their efforts to inform rural systems of the changing federal requirements and help them prepare to comply with the new law. We are the longest arm in EPA's outreach effort throughout the country.

Over the past few years we have come to this Committee to request your support to continue this program. We have emphasized three points. The first is that the primary non-compliance problems under the SDWA are among the small systems in rural areas. The second is that there is a very effective way to improve compliance among these small systems with a peer-oriented grassroots training and technical assistance program. Finally, we have requested that this Committee and the Congress provide funding for the operation of the program. Our testimony this year reemphasizes these same points.

After passage of the federal SDWA in 1974 the entire nature of providing drinking water in rural areas changed. Up to that time practically every small water system was an improvement over poor quality water wells or the daily hauling of water. However, it became clear to small systems that through EPA there would be a national uniform approach to improving the quality of drinking water and water quality would be as important as water supply. During this same period the Farmers Home Administration grant and loan program began to provide new funding for expanding and improving rural water systems. Small water systems increased in all the states. It was at this time that a number of state rural water associations combined together to form a national association for the primary purpose of upgrading the quality of small rural water systems to meet SDWA requirements and improve the quality of water for rural communities. It was clear to rural water systems that the brunt of the effort to meet SDWA standards would be borne by them. This is a prediction that has held true. Recent studies indicate that the cost of compliance with new SDWA regulations will be over $2 billion -- with a great majority of the cost falling on small systems.

It was because of this anticipated financial and regulatory impact that the grassroots training and technical assistance program was initiated. The program was a new concept which allowed rural water folks to initiate and encourage actions that would bring their own systems into compliance with a new federal law. In starting up the program it was difficult at first to gain the cooperation and support of such diverse groups as state health departments, FmHA state offices, EPA regional offices and even many small water systems. There was concern over turf protection and exactly what the role would be for each group. The conclusion reached by all groups was that by operating a grassroots training and technical assistance program that the effectiveness of all agencies involved with rural water was enhanced. The improvement in operation of rural water systems was particularly important in the support given the program by these systems. It is only through efficient water system operations that funds can be accumulated to make federally required improvements. In short, we believe that through the grassroots training and technical assistance program the sum of the efforts of EPA, states and FmHA has been greater than the whole of its parts.

The success of the program caused EPA to include the program in its annual budget and request it be expanded to additional states. While the initial states participating were in the South and Midwest, EPA requested the program to be tested in the East and West. It turned out to no one's surprise that the rural water problems throughout the country were very similar -- and NRWA was encouraged by EPA to move the program into new states. However, in the FY 1981 federal budget OMB eliminated the entire program without any effort to provide any alternative outreach program for rural areas. By this time state rural water associations knew that the grassroots approach was very successful; in fact, the training and technical assistance program was the most effective EPA environmental protection program operating in rural areas. We appealed to this Committee to continue the program and you did. We have asked for periodic expansion to other states because of our success in new states and you have supported it. All of our state rural water associations thank you for this generous help.

The program is a solid grassroots effort. It is folks working with folks where folks live and work. It is a program that is immediately responsive to resolving rural water system problems in a manner that is compatible with the rural way of doing business. The program provides:

- frequent training sessions covering a variety of rural water subjects in all rural areas of a state
- a minimum of ten days on-site technical assistance visits each month
- border-to-border contact with all rural water systems in each state through a permanent telephone number
- monthly or quarterly newsletters with down home rural water system operations advice, as well as a very clear message on changing EPA standards for SDWA compliance
- immediate assistance for any small system expressing operation or management difficulties by contacting the state rural water association office
- coordinated rural water system efforts within a state to press for increased state and local participation in the funding and support for rural water systems which reduces demand on FmHA grants and loans
- access to all small water systems for EPA and state regulatory personnel to deliver the message and monitor the level of effort for SDWA compliance among rural water systems

In short, the program delivers a simple, firm message to its peer participants -- "it is in the interest of rural water systems to take the steps necessary to protect the quality of their drinking water and be in compliance with the SDWA."

The number of participants in the training sessions continues to increase as do the number of rural water systems actively participating in the overall state association program. For example, in the twelve months from January 1, 1987 through December 31, 1987, state associations conducted 511 workshops and provided training for 18,845 rural water operators and other personnel. With the constant turnover of small system operators the majority of these persons have never attended water system training sessions. Over 7,732 technical assistance visits, including visits for serious compliance problems with the Safe Drinking Water Act, were also carried out and were normally the only hands-on assistance provided to these systems to help them meet the requirements of the Safe Drinking Water Act. Attached is a chart outlining state-by-state assistance visits over the past twelve months.

Our activities are closely coordinated with the individual state drinking water agencies in each state. Our work in rural areas and their work to develop a strong primary drinking water program in each state have made the SDWA the best administered environmental program in rural areas. Under the new SDWA the burden on these offices has increased dramatically -- and the funding has not increased. As a result, we support the need for increased funding for the state drinking water program and urge the Committee to recognize this need.

We are meeting with you today at a time when we can see that much has been accomplished in improving the capability of small systems to meet SDWA requirements. However, with the rapidly expanding requirements under the new law much more will need to be done. The SDWA provides for $10 million for small system technical assistance. This provision recognized the importance of small system technical assistance which this Committee has recognized in its present and past commitment to our program. We would urge you and your Committee to consider funding our present rural water training and technical assistance program as part of the small system technical assistance provision in the SDWA law. We have urged EPA to place the program in its Appropriations request based on the open support the program receives at every level in the Agency. We have talked with OMB stressing the cost-effectiveness and focus of the program on the highest priority problem in the entire Safe Drinking Water program. We hope to have it in next year's EPA appropriations request.

As we have done in the past we are asking you and the Committee to provide funding for our program. We would like to expand to six more states because we believe that our program will provide improved compliance with the new law in these states. Four of the new states, New Jersey, Maryland, Michigan and Washington, would immediately take full advantage of this opportunity and we urge you to consider increasing the program to include at least these states. We are ready to start a program in these states and ask for your support.

Thank you for your past support and thank you for allowing us to present our case to you today.

TRAINING AND TECHNICAL ASSISTANCE NUMBERS

JANUARY 1, 1987 THROUGH DECEMBER 31, 1987

STATE	NUMBER CONDUCTED	NUMBER ATTENDING	SYSTEMS CONTACTED
Alabama	17	424	277
Arkansas	16	685	295
Colorado	30	650	167
Florida	14	383	191
Georgia	13	687	122
Illinois	13	342	235
Indiana	17	514	310
Iowa	9	228	204
Kansas	12	1,791	194
Kentucky	23	827	208
Louisiana	13	575	214
Maine	16	372	196
Minnesota	11	400	228
Mississippi	30	1,522	434
Missouri	15	617	237
Montana	17	479	218
Nebraska	14	582	401
New Mexico	12	327	240
New York	15	743	110
North Carolina	18	626	100
North Dakota	15	363	275
Northeast	21	369	303
Ohio	20	309	349
Oklahoma	16	687	165
Oregon	13	286	245
Pennsylvania	2	116	52
South Carolina	15	436	403
South Dakota	18	969	130
Tennessee	17	781	292
Texas	15	672	91
Utah	14	375	233
Virginia	4	108	195
West Virginia	14	486	193
Wisconsin	5	114	225
Adjusted			
TOTAL	511	18,845	7,732

STATEMENT OF DAVID DICKSON, CONSERVATION ASSOCIATE, IZAAK WALTON LEAGUE OF AMERICA

Senator PROXMIRE. Our next panel will be Mr. David Dickson, Richard Wedepohl, Mr. Ernest Shea, Rich Egge, and David McDermitt. I understand that Mr. Dickson is a conservation associate with the Izaak Walton League of America. He will speak on funding for the Clean Water Act requirements.

Mr. Dickson.

Mr. DICKSON. Thank you, Mr. Chairman. My name is David Dickson. I speak today on behalf of the members of the Izaak Walton League of America, for whom I serve as conservation associate. I am also speaking on behalf of the Clean Water Action Project; the Environmental Policy Institute; the National Audubon Society, and the Natural Resources Defense Council.

The collective membership of our organizations represents over 1 million citizens deeply concerned with protection and restoration of this nation's water quality.

In his response to the President's state of the Union message, Speaker of the House Jim Wright justifiably took great pride in the fact that the 100th Congress, in a bipartisan effort, renewed America's commitment to clean water by overwhelmingly overriding the President's veto of the Water Quality Act of 1987.

Our organizations commend this Congress for that action and look to this subcommittee to ensure that commitment is fulfilled by providing necessary funding for all water quality programs authorized under the Clean Water Act.

The 1987 amendments initiated several new programs to address yet outstanding water quality problems and delegated much responsibility to the states. If funding for these programs falls short, the commitment this Congress renewed will go unfulfilled.

NONPOINT SOURCE MANAGEMENT PROGRAM

Perhaps the most important new program authorized by the 1987 Amendments is the new nonpoint source management program under section 319 of the Clean Water Act. Data available from EPS indicate that 65 percent of the pollutants found in America's rivers and streams and 76 percent of the pollutants found in our nation's lakes is from nonpoint sources of pollution. For our nation's estuaries, the figure is 45 percent.

Nonpoint source pollution is a major water quality problem of major proportions, requiring major commitment to remedy. With the enactment of section 319, Congress put into place a mechanism whereby the states will address this problem. The Water Quality Act authorized $400 million over 4 years, including $70 million for fiscal year 1988 and $100 million for fiscal year 1989. yet to date, no money has been provided for this program.

Most states are now in the process of fulfilling the requirements of section 319 and are planning to submit assessments and management programs. If adequately funded and properly implement, these state programs have the potential to make tremendous progress over the next 4 years to control this pervasive water quality problem.

If Congress does not appropriate money for this program in fiscal year 1989, these efforts will fall far short of their potential. The administration, in its fiscal year 1989 budget request, has asked for no funds for section 319. We recommend that the fully authorized amount of $100 million be appropriated for this vital program so that the states can effectively implement their programs in fiscal year 1989.

WATER QUALITY MANAGEMENT GRANTS

Turning to section 106, water quality management grants are critical to assuring the states implement the water quality programs required by the Clean Water Act. In addition, these grants are key to state efforts to implement new requirements for the control of toxic pollutants. Our organizations supports full funding for section 106.

In 1987, $70.1 million was appropriated. Yet in 1988, the first full year after the Water Quality Act added new responsibilities for the states, only $60.1 million was provided. In order for the states to continue to adequately manage their ongoing programs, as well as effectively implement new provisions, we strongly urge the full $75 million be appropriated for these grants which form the foundation for state water quality programs.

In closing, Mr. Chairman, I would just like to stress again that funding for the programs I have mentioned here and those included in our written statement is vital to the fulfillment of America's commitment to clean water. We urge this subcommittee to appropriate those necessary funds.

We thank you for this opportunity to present our views and for your continued support of clean water.

Senator PROXMIRE. Thank you, Mr. Dickson.

[The statement follows:]

STATEMENT OF DAVID J. DICKSON, CONSERVATION ASSOCIATE, IZAAK WALTON LEAGUE OF AMERICA

Mister Chairman, members of the Committee, my name is David Dickson and today I speak on behalf of the members of the Izaak Walton League of America for whom I serve as Conservation Associate. I am also speaking on behalf of the Clean Water Action Project, The Environmental Policy Institute, The National Audubon Society and The Natural Resources Defense Council.

The Izaak Walton League of America is a nationwide, membership based, non-profit conservation organization dedicated to the protection and restoration of America's natural resource heritage for present and future generations. The League has over 47,000 members in 376 chapters and 20 state divisions nationwide. For over sixty-five years the protection and restoration of America's water quality has been the League's top conservation priority and remains so today.

Clean Water Action Project is a citizens-based environmental lobby group representing over 400,000 members. Clean Water Action has a history of working on passage, implementation, and enforcement of legislation to curb water pollution and other toxic issues.

The Environmental Policy Institute, founded in 1972, is a national non-profit environmental organization engaged in environmental research, education, litigation and lobbying.

The Natural Resources Defense Council is a non-profit membership organization of 83,000 members dedicated to protecting America's endangered natural resources and to improving the quality of the human environment.

The National Audubon Society is a 500,000 member conservation organization dedicated to the preservation and enhancement of the natural environment.

The collective membership of our organizations represents over one million citizens deeply concerned with the protection and restoration of this nation's water quality.

In his response to the President's State of the Union Message, Speaker of the House, Jim Wright, justifiably took great pride in the fact that the 100th Congress had renewed America's commitment to clean water by overwhelmingly overriding the President's veto of the Water Quality Act of 1987. Our organizations commend this Congress for that action and look to this subcommittee to ensure that commitment is fulfilled by providing necessary funding for all water quality programs authorized under the Clean Water Act.

The 1987 amendments to the Clean Water Act, the Water Quality Act of 1987, (WQA) initiated several new programs to address yet outstanding water quality problems and delegated much responsibility to the states. These programs cannot be implemented without adequate funding. If funding for these programs falls short, the commitment Speaker Wright spoke of will go unfulfilled.

Perhaps the most important new program authorized in the Water Quality Act was the new Nonpoint Source Management Program under Section 319 of the Clean Water Act. Data available from EPA indicate that nonpoint source pollution, runoff from urban and rural areas, is responsible for the greatest amount of pollution found in our rivers, streams and estuaries today. The data indicate that 65 percent of the pollution found in America's rivers and streams and 76 percent of the pollution found in our nation's lakes are from nonpoint sources of pollution. For our nation's estuaries the figure is 45 percent. A 1985 report by the Conservation Foundation estimated that soil erosion alone causes $6.2 billion dollars in off-site damage each year. Nonpoint source pollution is a water quality problem of major proportions requiring a major commitment in funds to remedy.

With the enactment of Section 319 of the Clean Water Act, Congress put into place a mechanism whereby the states will begin to address this water problem. Section 319 requires states to conduct assessments which identify nonpoint sources of pollution that contribute to water quality problems, as well as waters or stream segments unlikely to meet water quality standards without additional nonpoint source controls. States must develop management programs to be implemented over a four year period to control pollution from identified sources. The WQA authorized $400 million over four years for this program, including $70 million in FY 1988 and $100 million for FY 1989. Yet, to date, no money has been appropriated for this program, and many states with established programs could have effectively utilized Section 319 money in FY 1988.

Most states are now in the process of fulfilling the requirements of Section 319 and planning to submit assessments and management programs by or near the August 1988 deadline. If adequately funded and properly implemented these state programs have the potential to make tremendous progress over the next four years to control this pervasive water quality program. While limited funds are available from set-asides in the Construction Grants Program, much more is authorized under Section 319. If Congress does not appropriate money for this program in FY 1989 these efforts will fall far short of their potential. The Administration in its FY 1989 budget has requested no funds for this program under Section 319. We recommend that the fully authorized amount of $100 million be appropriated for this vital program so that the states can effectively implement their programs in FY 1989.

Section 106 Water Quality Management Grants are critical to assuring that the states implement the water quality programs required by the Clean Water Act. These funds are used by the states in carrying out such responsibilities as reviewing water quality standards, issuing and enforcing NPDES permits, development of sludge programs, water quality monitoring, and assuring proper implementation of the pretreatment program. In addition, these grants are key to state efforts to implement new requirements for the control of toxic pollutants under Section 304(l) and Section 303(c)(2)(B) of the Clean Water Act.

Our organizations support full funding for the Section 106 program. In 1987 $70.1 million was appropriated. Yet in 1988, the first full year after the WQA added new responsibilities for the states, only $60.85 million was provided for this program. In order for the states to continue to adequately manage their ongoing programs as well as effectively implement new provisions, we strongly urge the full $75 million be appropriated for these grants which form the foundation for state water quality programs.

Aside from the Nonpoint Program, the area of funding most shortchanged in the Administration's budget request is the Construction Grants Program. The Administration has requested only $1.5 billion of the $2.4 billion authorized for FY 1989. We support full funding for this program for the construction of much needed municipal sewage treatment plants and the capitalization of the new State Revolving Loan Funds. In addition, full funding for this program is critical to supporting the Nonpoint Program and the National Estuaries Program through the use of set-asides under Sections 205(j),(l) and 201(g).

Key to the effectiveness of our nation's water quality programs to protect and restore America's water quality is EPA's ability to enforce the requirements of the Clean Water Act. We feel that the Administration's request shortchanges enforcement. Aggressive oversight and review of pretreatment programs, state NPDES programs and EPA's efforts to issue and review permits in states where the agency or the permit issuing authority, require additional EPA staff. EPA is requesting only $18,835,800 for salaries and expenses for enforcement (408.3 FTE's), a modest increase of $1,093,100 with a decrease of almost ten FTE's over last year's appropriation. In the closely related area of permit issuance, EPA is requesting $13,976,400 for salaries and expenses (343.2 FTE's) and estimates that it will issue 235 major industrial and 175 major municipal permits. Yet in FY 1988, with $13,163,300 for salaries and expenses (326.8 FTE's, only slightly fewer personnel), the agency will be able to issue a combined total of 329 permits. It is unclear how the agency expects to be able to issue over 80 additional permits with only a few more employees. The permit issuance staff is also responsible for reviewing storm water applications and individual control strategies under section 304(l). We recommend at least $6 million in additional funding to enable EPA to fulfill its enforcement and permitting responsibilities.

Another extremely important new program authorized by the Water Quality Act is the National Estuaries Program under Section 320 of the Clean Water Act. Estuaries are among this nation's most important and productive water bodies. In addition to the construction grants set-asides in Section 205(l), $12 million is authorized for this program for FY 1989. Of that amount, the Administration has requested only $8.591 million. To assure this program makes significant progress toward restoring the integrity of these most valuable water bodies we recommend full funding for this program.

America's lakes are also valuable water bodies that receive special attention under the Clean Water Act's Clean Lakes Program. This program is designed to help assess and remediate problems such as siltation, eutrophication, toxic pollution and acidification of lakes across the nation. EPA has not requested any funding for this program. We recommend an appropriation of $11 million for this program in FY 1989.

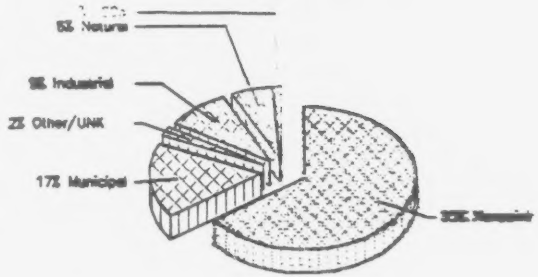
In addition to those mentioned above, there are two programs of special geographic concern to our organizations, the Chesapeake Bay Program and the the Great Lakes Program.

The Chesapeake Bay is the nations's largest and historically the most productive estuary. It has been singled out for special effort by both the Administration and by the Congress. The EPA has an ongoing program to support and coordinate local and state efforts to restore the Chesapeake Bay. The WQA formally established the program as a part of the Clean Water Act. We ask that the committee fully fund the program in FY 1989 by providing $13 million so that this program can continue to help the states improve the quality of the nation's largest and most important estuary. Of equal importance is the protection and restoration of the water quality of the Great Lakes. Our organizations support full funding for this program in FY 1989.

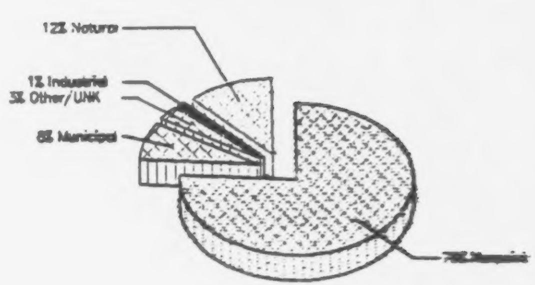
In addition to funding for the water quality programs, our organizations are also concerned about the protection of our nation's groundwater resources and support implementation of programs to protect this vital resource under the Safe Drinking Water Act. Approximately 50 percent of all Americans depend on groundwater for their source of drinking water. In the Safe Drinking Water Act Amendments of 1986 Congress rightfully included a program to help states and communities protect their groundwater resources, the Wellhead Protection Program. This program is particularly important in enabling states to start mapping, planning and taking preventive action to protect groundwater from contamination. Although a total of $20 million was authorized for this program in FY 1988 no funds were appropriated. In FY 1989 this program is authorized at a level of $35 million, yet the Administration has requested no funding. We urge that the committee provide at least $8 million in funding for this program.

In closing, I would just like to stress again that funding for the programs I have mentioned is vital to the fulfillment of America's commitment to clean water. We urge this subcommittee to appropriate those necessary funds. We thank you for this opportunity to present our views and for your continued support of clean water.

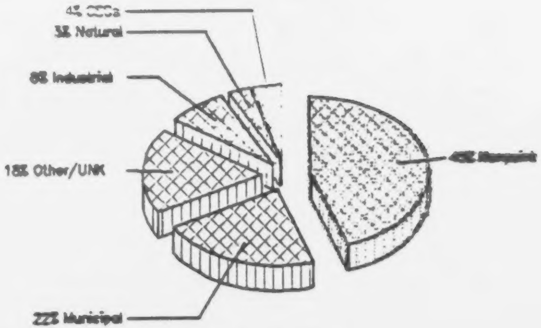
CAUSES OF POLLUTION
IN U.S. RIVERS AND STREAMS



CAUSES OF POLLUTION
IN U.S. LAKES



CAUSES OF POLLUTION
IN U.S. ESTUARIES



SOURCES: 1986 305(b) Report and STORET

STATEMENT OF RICHARD WEDEPOHL, WISCONSIN DEPARTMENT OF NATURAL RESOURCES, AND PAST PRESIDENT, NORTH AMERICAN LAKE MANAGEMENT

CLEAN LAKES PROGRAM

Senator PROXMIRE. Our next witness is Mr. Richard Wedepohl. Mr. Wedepohl is with the Wisconsin Department of Natural Resources and the past president of North American Lake Management.

Go ahead, sir.

Mr. WEDEPOHL. Mr. Chairman and members of the distinguished subcommittee, I come before you to represent the North American Lake Management Society and our nation's lakes, a resource that was not well considered by our past water pollution control efforts.

Mr. Chairman, our message and request is simple and straightforward. We are asking for your support in funding the Clean Lakes Program on the order of $25 to $30 million for the next fiscal year with no strings attached.

When Congress renewed the Clean Water Act, they included a strong reauthorization of the Clean Lakes Program. The reason for this, Mr. Chairman, as I think you well know, is because the Clean Lakes Program is both very popular and, most importantly, highly effective.

It directly addresses the problems that most people perceive as being water pollution. Local citizens demonstrate their commitment for this voluntary program, and I cannot stress this enough. They voluntarily raise local funds to clean up lake water quality problems.

The federal support sends them the signal they need to follow through and get the job done. The Clean Lakes Program is a grass roots program in every sense of the word.

We still continue to be mystified by the low level of support this program has historically received from the agencies charged to protect our natural resources. The Clean Lakes Program addresses the major threats to the quality of our nation's lakes. Unlike other programs, it focuses on the resource, not just on general problems such as toxics or acid rain, which each affect just a comparative handful of lakes.

We urge you to give the Clean Lakes Program the support it deserves. The dollars are small, yet the message they send are heard loud and clear. Mr. Chairman, we also want to request your support for funding the new nonpoint source program.

NONPOINT SOURCE PROGRAM

The nonpoint source problem is a major threat to our nation's lakes, and states need funds to help them solve this problem. We believe it is important to demonstrate the effectiveness of nonpoint source best management practices in a variety of situations across this country so that this subcommittee may have a real basis on which to judge future program appropriations.

Mr. Chairman, the North American Lake Management Society is working closely with many lake association groups to promote and implement watershed management and to enhance and protect our nation's water quality

The Clean Lakes Program continues to play a very effective role in demonstrating to people that clean lakes can be protected and polluted lakes can be restored. The nonpoint source program is a new initiative and should be given every opportunity to succeed.

There really is no substitute for clean water. Our society is dedicated to clean lakes and urges you to appropriate funds so that our national heritage of lakes may be protected and restored.

As always, I must add, Mr. Chairman, that in the great state of Wisconsin, where our inland lakes comprise over 75 percent of our states' surface water resources, we have greatly appreciated the support you have shown us in the past, and we will miss you next year. Thank you, Mr. Chairman, for this opportunity.

Senator PROXMIRE. Thank you very, very much, Mr. Wedepohl.

[The statement follows:]

STATEMENT OF RICHARD E. WEDEPOHL, PAST PRESIDENT, NORTH AMERICAN LAKE MANAGEMENT SOCIETY

SUMMARY OF TESTIMONY

North American Lake Management Society

RECOMMENDATIONS:

1. Section 314 -- $30 million is authorized; we strongly recommend the full appropriation be made. Much could be accomplished with $10 to $15 million annually for five years: a continuing level of support for five years is necessary to give States time to develop their own self-supporting lake protection programs.
2. Section 319 -- Funds should be appropriated so that EPA can implement nonpoint pollution controls in several demonstration watersheds within each EPA region. We suggest a minimum level of $30 million.
3. Research and technology transfer -- must be funded to develop and improve assessment methods, predictive tools, and restoration measures for lake and reservoir management.

Mr. Chairman and Members of the Subcommittee:

My name is Richard Wedepohl, and I am past president of the North American Lake Management Society (NALMS), a national organization made up of citizens, scientists, lake associations, and water pollution control professionals who are concerned about the water quality of our Nation's lakes and reservoirs. I am also with the Department of Natural Resources in the State of Wisconsin.

INTRODUCTION

For the last seven years, NALMS has testified before this Subcommittee in support of funding for EPA's Clean Lakes Program under section 314 of the Clean Water Act and for additional research on the effectiveness and longevity of techniques for restoring and protecting lake quality. We also have stressed the need for funding a national program to control nonpoint source pollution, which contributes significantly to the deteriorating quality of many lakes.

This year we want to stress the urgency for funding the section 314 Clean Lakes Program and the section 319 nonpoint pollution management program -- EPA and State programs simply do not have sufficient resources to achieve the needed restoration and protection of lakes and reservoirs.

The data EPA has collected from the States, as summarized in the 1986 Report to Congress, show that over the last decade, four times more lake waters have been reported to have degraded in quality than have improved in quality. The States also reported over 8 million acres of lakes (over half of all assessed lakes) to be impaired or threatened by unregulated nonpoint source pollution. Some States are particularly hard hit. Over 90 percent of Wisconsin's assessed lakes were reported to be impaired or threatened, most of them by nonpoint source pollution. Eighty percent of the assessed lakes in the Midwest are impaired.

The seriousness of the problem is recognized by the States but they clearly cannot handle it alone. NALMS has been actively working with States to develop individual State programs. Next month, we are co-sponsoring (with EPA and the Northeastern Illinois Regional Planning Commission) a national meeting in Chicago designed to help States put together their own State Lake Management Programs.

But the States need a strong signal from Congress that the Federal/State partnership is viable and will be maintained. They need substantial Federal guidance and financial incentives to develop their own programs and convince State legislatures that EPA will assist them. Section 314 needs funding if States are to develop restoration and protection programs for lakes.

In previous years, this Subcommittee's conference reports have indicated that once the Clean Water Act was reauthorized, section 314 would be appropriated more funds. Unfortunately, the Subcommittee failed to honor that commitment when the Act was reauthorized last year, appropriating no funds for the Clean Lakes Program in 1988.

Today, NALMS is here to represent citizens who earnestly desire to restore their lakes and request your continued support for these grass roots efforts.

NALMS asks you to meet the needs of your constituents for clean water. In 1987, Congress amended section 314 to strengthen it and to provide more emphasis on lakes and reservoirs. We ask this Subcommittee to follow through on that commitment. Without adequate, stable funding and direction from this Subcommittee, our lakes will remain degraded and corrective action will become more expensive if delayed into the future.

RECOMMENDATIONS

1. Section 314 -- $30 million has been authorized for this Program; we strongly recommend that the full appropriation be made. Even if Congress were to appropriate $10 to $15 million annually for five years for section 314 much could be accomplished by the Clean Lakes Program. A continuing level of support for five years is necessary to give States time to develop their own self-supporting lake protection programs.

Background:
The EPA Clean Lakes Program is doing an excellent job, with minimal resources ($3 to $10 million annually since 1980) and virtually no support from the Administration. In 1987 alone, the Program funded projects in 21 States. Since 1976, EPA has funded more than 350 projects throughout this country at a cost of $102 million, with 95 percent of the funds going to grants, 87 percent of the grants into actual restoration work and 7 percent into diagnostic studies.

Citizen response continues to be remarkable. For example, a small amount -- $120,000 -- given Delevan Lake in Wisconsin has been supplemented with $3 million raised locally. Already, the local community has contributed $500,000. Incidentally, this lake restoration effort came about following the failure of a $40 million sewer project to improve the lake.

Similar stories can be repeated across this Nation. When the Clean Lakes project on Lake Ballinger in Washington's Mountlake Terrace was completed and Federal/State funding for monitoring ended, the City continued the effort, hiring a full-time watershed manager. Ordinances have been passed to control construction and thereby reduce nutrient loading, and a citizen's watch number established to facilitate citizen reporting and government response to nutrient loading and toxic spills.

Each year, NALMS recognizes the Outstanding Restoration Project of the Year -- Lake Jackson near Tallahassee, Florida, which won the 1987 award, is an excellent example of the kind of cooperative effort that has made the Clean Lakes Program successful. EPA provided 314 funding, working with both a State agency, the Florida Department of Environmental Regulation, and a regional agency, the Northwest Florida Water Management District, to implement innovative techniques to treat the stormwater drainage that affects that lake.

We commend the Clean Lakes Program staff for reviewing the section 314 regulations and requesting suggestions from State personnel so that guidance may be issued annually on implementing these Regulations. We are concerned, however, that the Regulations be kept intact to preserve program identity and priority and not combined with other programs.

2. Section 319 -- Funds should be made available so that EPA can implement nonpoint pollution controls in several demonstration watersheds within each EPA region. Because of the enormous impact of nonpoint source pollution on the water quality of this Nation, Congress must fund section 319 for 1989; we suggest a minimum level of $30 million.

Background: Recent investigations have documented that nonpoint source pollution causes greater amounts of water quality damage in our Nation's waters than do point source discharges (The Nation's Water. Key Unanswered Questions About the Quality of Rivers and Streams. US GAO Sep. 1986 GAO/PEMD-86-6). We supported Congressional efforts to enact the section 319 nonpoint source program. However, NALMS believes that funds should be provided to State water quality agencies first, before being made available to other agencies. This could avoid the fragmentation of nonpoint source programs.

Implementing nonpoint source controls in demonstration watersheds: If Congress does not appropriate funds directed to utilizing this section of the Act to accelerate regional projects, Congress will likely have little data in 1991 to judge whether the section 319 approach worked.

3. Research and Technology Transfer -- must be funded to develop and improve assessment methods, predictive tools, and restoration measures for lake and reservoir management.

Background: The Lake and Reservoir Restoration Guidance Manual mandated and funded by Congress three years ago was completed as required by February 1, 1988. A landmark volume, the Manual has distilled technical information on lake restoration to provide it in a usable form for lake managers and informed citizens. It also has indicated areas where we need additional research and information. For example, we don't know the longevity and effectiveness of many restoration techniques. Therefore, the Manual must be updated periodically. Already, EPA is preparing a second volume as a series of technical supplements, one of which is nearly complete.

The Clean Lakes Program must be encouraged in this effort to communicate needed information on lake restoration and protection to the citizens who will act upon it. However, for the Manual to be successfully used in lake restoration, we must have effective State and local programs to disseminate this information. It is essential that the Clean Lakes Program be funded adequately long enough to insure that these State and local programs become ongoing.

SUMMARY

This Subcommittee is aware that the lakes and impoundments of this Nation are vital not only for their ecological functions in supporting fish and wildlife but also for their economic benefits -- measured in the billions of dollars -- to many local, State, and national businesses. Unfortunately, our Nation is losing the battle to keep its lakes clean and the damage may be irreversible, in many cases, because of the high cost of cleanup.

Congress is to be commended for its reauthorization of the Clean Water Act. The message it has given to the American people is that clean water is an important part of our heritage and our quality of life and needs to be protected, restored, and maintained. Americans clearly want and deserve clean lakes and reservoirs for safe drinking water, recreation, industrial use, and aesthetic enjoyment. Ninety-nine percent of our Nation's population live within 50 miles of a publicly owned lake!

This Subcommittee can reverse the worsening trend in pollution of our Nation's lakes by specifically targeting funds for the Clean Lakes Program. NALMS asks this Subcommittee to make a commitment for clean water by supporting our recommendations for funding these key programs. We appreciate the opportunity to testify before you.

STATEMENT OF HON. PETE WILSON, U.S. SENATOR FROM CALIFORNIA

INTERNATIONAL SEWAGE PROBLEM

Senator PROXMIRE. Before I called on our next seated witness, I am going to call on the distinguished Senator from California, Senator Pete Wilson, who will present his viewpoint on Tijuana sewage. I didn't know they had any out there.

Senator WILSON. Mr. Chairman, it seems a gross intrusion, both literally and figuratively, to interrupt a discussion of clean lakes with what I am about to talk about. But it is, nonetheless, a critical need, and I am grateful to you for allowing me to come before you.

What I am here to ask for and to express as strong as possible support for is a $27 million appropriation to finish the construction of a defensive sewer works system that will prevent Tijuana sewage from spilling over the border, literally, into the city of San Diego.

The problem is not new; it is one that has been with us for almost half a century, and it is growing much, much worse. The Tijuana sewer works are notorious for malfunctioning. When the system fails, Tijuana sewage flows downhill and literally across the border into San Diego.

Even when the system does work, it is incapable of capturing all of Tijuana's sewage, as a result of which at least 10, and more often 12, million gallons a day of raw sewage flows directly into the Tijuana River as it crosses the border into the United States, polluting a federally recognized estuary in the process.

FUTURE PROSPECTS ALARMING

What is even more disturbing is that the problem promises to become much worse within the next few years. EPA estimates that Tijuana sewage flows will reach 34 MGD by 1990, and increase dramatically to 100 MGD by the year 2005. The existing sewer system in Tijuana has a capacity that is presently 34 MGD, which is what it will reach by 1990, and there are no immediate plans or money, apparently, to increase that capacity.

We are confronted with a situation where tomorrow's Tijuana's sewage will have no place to go but over the border into the United States.

Given the projected increase in Tijuana's population, the continued operational problems with the existing Mexican sewage system and the apparent unwillingness and financial inability—I would question the wisdom of that term, but the unwillingness certainly is true—on the part of the Mexican Government to adequately respond to its sewer system needs, we are faced with a really untenable situation.

Unhappily, our worst fears are becoming reality. The present system, the system for which I am appearing today, is one that Congress has already determined to be appropriate. In 1984, we decided to authorize $32 million to finance a Tijuana sewage defensive works system along the United States-Mexico border. The planning has gone forward under a prior grant.

It is basically, as I believe the chairman is aware, an emergency sewer pipe that is linked with the Tijuana main pump station. What it will do, this defensive works system, Mr. Chairman, is at least for the time being, contain this truly untenable situation.

Long term, obviously, I think, it is not the responsibility of this committee. In the short-term, the willingness of this committee to fund this necessary construction will be a truly critically required stopgap. But obviously, the real need is for the Mexican Government to respond to their own responsibility and that more appropriately, I suppose, is in the purview of the Foreign Relations Committee.

NEED FOR CONSTRUCTION FUNDS

But the action that has been taken, the prior appropriation, is one that my citizens are very grateful for. In fiscal 1988, we appropriated the $5 million for the engineering and design of the project, and now the $27 million that we are seeking in fiscal year 1989 will permit the timely completion of that defensive sewer works system.

Rather than go on at length, Mr. Chairman, I think you have the drift of the problem, and we are here this morning to urge most strongly the committee's support of this project. I believe my colleague, Senator Cranston, either has been here himself or else will place a statement in the record. We are keenly interested in this project for the reasons that are obvious.

Senator PROXMIRE. Thank you very much, Senator Wilson. Senator Cranston was here. He testified earlier on the same project and on the same side of the same issue. [Laughter.]

Surprisingly.

Senator WILSON. It is easy to be on the right side.

Senator PROXMIRE. I might say to Senator Pete Wilson, he wasn't born in Wisconsin but he was born only 17 miles south of the border and he was delivered by my father's partner. [Laughter.]

He made very few mistakes, and he wasn't one of them. [Laughter.]

Well, thank you very much, Senator Wilson.

Senator WILSON. Thank you, Mr. Chairman.

Senator PROXMIRE. It will receive every consideration.

Senator WILSON. Thank you.

[The statement follows:]

STATEMENT OF SENATOR PETE WILSON

Mr. Chairman, I would like to thank you for scheduling today's hearings and providing me with an opportunity to testify on behalf of a critical project in San Diego, California. As the former Mayor of San Diego for eleven years, it gives me great pleasure to be representing the City here today on an issue which has plagued it for nearly half a century.

I am here to express my strong support for a $27 million appropriation to finish the construction of a defensive sewer works system that will prevent Tijuana sewage from spilling over the border into San Diego.

The problem of Tijuana sewage is nothing new. Sewage from Mexico has been penetrating our international border since the 1930's.

The particular problem for San Diego is twofold. First, Tijuana sewer works are notorious for malfunctioning. When its system fails, the Tijuana sewage flows downhill and across the border into San Diego.

Second, even when Mexico's system does work, it is incapable of capturing all of Tijuana's sewage. As a result, at least 10-12 million gallons a day (mgd) of raw sewage flows directly in the Tijuana River as it crosses the border into the U.S. -- polluting a federally recognized estuary in the process.

What is even more disturbing is that the problem promises to become much worse in the next few years. The Environmental Protection Agency estimates that Tijuana sewage flows will reach 34 mgd by 1990 and increase dramatically to 100 mgd by the year 2005. Given that Tijuana's existing sewer system capacity is only 34 mgd -- and there are no immediate plans or money to increase that capacity -- we are confronted with a situation where tomorrow's Tijuana sewage will have no place to go but over the border and into the U.S.

The projected increase in Tijuana's population, the continued operational problems with the existing Mexican sewage system, and the apparent unwillingness and financial inability on the part of the Mexican Government to adequately respond to its sewer system needs combine to create an untenable situation. San Diego's worst fears are beginning to come true. This beautiful city and its surrounding communities are in peril of being polluted with Tijuana waste.

San Diego is struggling to cope with its own sewer system needs, and it does not need its problems compounded by Tijuana.

The solution to this problem is one that the Congress has already determined to be appropriate. In 1984, we decided to authorize $34 million to finance a Tijuana sewage defensive works system along the U.S.-Mexico border. This system is basically designed to link up an emergency sewer pipe to Tijuana's main pump station. In the event of a pump failure, Mexican sewage would flow into this emergency pipe, which extends along the U.S. border. The pipe would then dump the sewage back into Tijuana's treatment system at a point where a gravity flow channel moves the Tijuana sewage to treatment lagoons further down the Mexican coastline. This pipe will also be designed to capture fugitive Tijuana sewage that is flowing directly into the Tijuana River.

For Fiscal Year 1988, Congress appropriated $5 million for engineering and design of this project. To further this cause, we now need $27 million in FY89 to permit timely completion of this defensive sewer works system. The U.S. deserves such protection.

On a final note, I would like to point out that the City of San Diego is currently working with the Corps of Engineers in the engineering and design of this project. These discussions focus on digging a ditch large enough to accommodate a pipe or pipes that will not only take care of Tijuana sewage, but San Diego sewage as well. With state help, the City intends to pay for this portion of the project. The only federal money being sought is that which is needed to complete the share of the project that relates to Tijuana.

In sum, Mr. Chairman, I strongly urge you to support an appropriation of $27 million to finish this much needed and long overdue project next year.

Before I leave, there is another project that I would also like to bring to the Subcommittee's attention. I am joining with Senator Cranston, the County of Kern, the State of California, Chevron and independent oil producers in requesting $3 million for the projected federal share of a proposed study known as the San Joaquin Valley Air Study. This proposed study is crucial to understanding the air pollution dynamics of California's San Joaquin Valley. We need accurate information about the sources of the air pollutants that are causing this part of the state to be in non-attainment under the Clean Air Act.

It is suspected that many of the Valley's air pollution problems can be attributed to the long-range transport of pollutants within the Valley's air basin. The San Joaquin Air Study would provide detailed information that can be used to test this theory and help design a control program. Also, because of the technology involved in carrying out this study, it could serve as a model for studies in other areas of the country, such as the Northeast Corridor, that experience similar problems with long-range transportation of pollutants.

This $9 million project also illustrates the cooperation that is possible between the federal, state and private sectors in funding a much needed program. The state and local governments are paying for one-third of the study, the private sector for another third, and it is requested that the federal government fund $3 million for the final third. This is intended to be a one-time appropriation.

Thank you again for giving me this opportunity to appear before the Subcommittee today and testify on behalf of these vital projects.

STATEMENT OF ERNEST SHEA, NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS

Senator PROXMIRE. Our next witness is Mr. Ernest Shea, executive director of the National Association of Conservation Districts.

Mr. Shea?

Mr. SHEA. Thank you very much, Mr. Chairman. I name is Ernie Shea, and I am the executive vice president of the National Association of Conservation Districts. I appreciate the opportunity to appear here this morning.

Rather than reading my entire testimony, I would request that it be submitted in the record in its entirety.

Senator PROXMIRE. Without objection.

Mr. SHEA. I will just highlight a few points.

ROLE OF LOCAL CONSERVATION DISTRICTS

Mr. Chairman, our organization represents the 3,000 local conservation districts around the country and the 125,000 men and women who serve on district boards. Conservation districts coordinate and carry out resource management programs at the local level, and they provide the leadership for many of the federal, state, and local programs that are implemented at the county level.

Although districts are best known for the work they do in cropland and erosion control, they are also actively involved in forest fire management, range management, nonpoint pollution source control work, and a variety of other natural resource initiatives.

NONPOINT SOURCE POLLUTION

My main purpose for being here today is to also endorse the need upon you for the nonpoint source section of the Clean Water Act.

The act does allow for funds to be authorized this year as it did last year and for the next several. To date, no funds, as you know, have been authorized, and that does have us quite concerned. Our member districts are the group of people at the local level that most likely will be implementing a major portion of these programs.

Our concern is that without funding, that these programs just are not going to be able to get off the ground. The point that I want to stress this morning, sir, is that we feel we are at a critical juncture of this problem and that we have invested quite a bit of time and energy and planning for nonpoint source pollution control work, but to date, we have begun very little.

Our members were active back in the 1970's developing 208 management plans to deal with nonpoint source pollution at that time. They were geared up; they were ready to go. They developed good, solid plans that would result in land treatment measures being applied that would have helped with nonpoint source pollution control.

They see the same cycle continuing, because no funding was ever provided to implement the 208 program. They were very excited to see the Clean Water Act Amendments passed. They are still hopeful that funding will be authorized, but their concern is that without the funding, our ability really to have any impact on nonpoint source pollution is going to be greatly compromised.

For that reason, we also recommend that funding be allocated this year. We know $100 million has been authorized. Obviously, anything would help, but we think we can certainly utilize every bit that has been authorized at the $100 million level.

FEDERAL GOVERNMENT INVOLVEMENT REQUESTED

In addition to providing funding to the states to begin nonpoint source pollution control work, we also think that there is a need for the federal government to become more actively involved with some of the federal agencies that have nonpoint source pollution control responsibilities.

The one in particular I would like to speak to this morning is the Soil Conservation Service within the United States Department of Agriculture. SCS has 50 years of experience working cooperatively with landowners providing technical assistance. That is exactly what is needed for nonpoint source pollution control work. We need educational assistance, financial assistance to design these practices that are needed to apply to the land to control nonpoint source pollution.

Solving nonpoint source pollution is going to take a cooperative effort on the part of federal, state, and local governments, and we believe the federal government also has a responsibility. We would urge that $25 million be authorized in this fiscal year through EPA's section 304(k) authority to allow SCS to begin to provide some of the technical assistance work.

MATCHING FUND REQUIREMENTS

The last point that I would like to make this morning, Mr. Chairman, relates to a concern we have with regard to how EPA has been interpreting a section of the Clean Water Act dealing with matching fund requirements for nonpoint source programs.

EPA has ruled that state conservation programs and state cost share programs cannot be included as part of the state match or as part of the state's maintenance of effort. They have done so because of the fact that federal funds are restricted. They can only be used for demonstration purposes and for a few other purposes.

We, frankly, don't see the logic in not allowing states to use cost share funds and their conservation appropriations as part of the match. It just doesn't quite make sense.

The states are going well beyond what the federal government was prepared to do with those funds, and we think those funds should be allowed to be included in their matching fund that they present to EPA.

So for this reason, we urge you to include the language in the report that directs the agency to include these funds as part of the match. Thank you very much, Mr. Chairman.

[The statement follows:]

STATEMENT OF ERNEST C. SHEA, EXECUTIVE VICE PRESIDENT, NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS

SUMMARY OF REQUEST

The National Association of Conservation Districts recommends that:

1) Full funding be provided to EPA to implement Section 319 - the Nonpoint Source Pollution Management Program - as was authorized in the 1987 amendments to the Clean Water Act.

2) That the funding to states for water quality planning not be reduced.

3) That funding for the Clean Lakes Program be increased to allow the program to reach its potential to improve the environment.

4) That funding be provided to EPA under authority in Sec. 304 (k) to be transferred to the Soil Conservation Service to provide technical assistance to land managers to control nonpoint source pollution.

5) To facilitate the above requests, NACD recommends the following funding levels for federal fiscal year 1989: Water Quality Management (205j) - $23 million; Clean Lakes Program - $15 million; State Programs Grants - $72 million; Sec. 319 NPS Grants - $100 million; and Sec. 304K NPS Tech. Assistance (Transfer to SCS) - $25 million.

COMPLETE STATEMENT

Mr. Chairman, Members of the Subcommittee, my name is Ernest C. Shea and I am the Executive Vice President of the National Association of Conservation Districts (NACD). I want to thank you for your invitation to testify before your committee today.

NACD is the national organization that represents the almost 3,000 conservation districts in this country and the more than 15,000 men and women who serve on district boards.

Conservation districts have a long history of dealing with natural resource problems facing our citizens. Since the first district was formed more than fifty years ago, they have provided local leadership to cooperative local-federal-state efforts to improve the condition of our soil and water resources. Although conservation districts were originally established to correct the serious erosion problems that were prevalent during the Dust Bowl days, over the years their programs and responsibilities have been broadened substantially. Conservation districts now have responsibility for coordinating a broad-based natural resource management program at the local level. In addition to cropland erosion control, conservation districts are also actively involved with forestland management, wetland protection and enhancement, urban sediment and erosion control, nonpoint source pollution abatement, wildlife and fish habitat management and many other renewable natural resource management activities.

Today I am here to address several of EPA's efforts to improve the quality of our nation's waters. Conservation districts have been involved in these efforts for several years. In the late 1970's, districts were actively involved in the development of 208 management plans as evidenced by the fact that 40 states designated conservation districts as the lead local agency for implementing nonpoint pollution abatement efforts. In addition, districts have been intimately involved with 31 of the 54 Clean Lakes (Sec. 314) projects that have been authorized to date. NACD itself has been actively involved in water quality work for many years. In addition to coordinating several water quality related projects for the Environmental Protection Agency, we have also been a reliable source of information on federal, state and local water quality initiatives for our members and cooperating agencies.

Section 319 Nonpoint Source Pollution Management Program

The 1987 amendments to the Clean Water Act included the establishment of a program to manage and reduce pollutants entering our waters from nonpoint sources. This program calls for each state to develop a comprehensive assessment and management plan for nonpoint sources. The first assessment reports are due to be sent to EPA by April of this year and comprehensive management plans are due by August 1, 1988. State soil conservation agencies, with the assistance of soil and water conservation districts, have been working diligently since the passage of the amendments to help develop these assessment reports and management plans.

While it is still several months until we see an updated report on the effects which nonpoint source pollutants are having on water quality, a good preview can be obtained by reviewing the recently released "National Water Quality Inventory: 1986 Report to Congress." Sixteen states have identified nonpoint source pollution as a special concern for meeting water quality goals. Of the 52 states and territories submitting reports to EPA, 49 identified problem pollutants that can be linked directly to nonpoint source pollution. Thirty-three of these listed NPS as a major problem.

I believe that this illustrates the fact that nonpoint source pollutants represent one of the largest, if not the largest, single water quality problem still facing the nation. Congress recognized this fact when it adopted Section 319 as part of the 1987 package of amendments to the Clean Water Act. However, we are facing a critical juncture in the program.

As happened with the 208 program, there has yet to be any direct funding made available for implementing the program. I can honestly tell you that districts and state soil conservation agencies are once again worried about being left with a federally mandated program for which funds have not been appropriated. They see a very real problem with EPA requiring states to implement these management plans with funds that have been allocated for other programs. That is not a very comfortable position for these people to be in.

NACD urges you to provide the $100 million that was authorized for the program in Fiscal Year 1989. Although this limited amount of money will not come close to meeting what is needed on a national basis, it does, nonetheless, represent a beginning. More importantly, however, it would demonstrate that Congress is indeed serious about managing nonpoint source pollution. We recognize that the demand for limited water quality funds is high, but the simple fact of the matter is that without federal seed money to get state and local nonpoint source pollution programs moving forward, very little progress will be realized in addressing this major water pollution problem.

There are several other points on this section of EPA's budget that I would like to address. First is the way the agency and OMB are calculating the 1% set-asides from the construction grant accounts. They have made what we feel to be an arbitrary decision in that the portion of the funds which are earmarked for State Revolving Funds (SRF's) are not to be counted as funds available for set-aside programs (Sec. 319 and 205 (j)). In effect this reduces all state allotments for nonpoint source planning by half. We would urge this subcommittee to include language in your report to indicate that this was not Congress' original intent.

The other issue also deals with the intent of Congress on matching funds for federal NPS grants. Section 319 requires states to match federal funds and to demonstrate that it is maintaining its earlier efforts in NPS control. For the most part, existing states NPS programs included soil conservation and erosion control programs as part of its maintenance effort. In addition to technical assistance and education, many of these programs contain a cost-share component through which the state helps land managers defray part of the costs associated with installing best management practices.

For example, North Carolina has a program designed to encourage farmers to implement conservation systems which will reduce nutrient loading of streams identified as nutrient sensitive. Vermont has a program to encourage better management of animal wastes. Montana has a program to encourage a change in dry-land farming techniques to protect ground water from contamination of naturally occurring salts. Control of saline contaminants is a major effort in the Colorado River Basin. All of these programs involve a cost-share component.

We believe EPA has made another arbitrary and incorrect determination when they ruled that state cost-share programs can not be counted as part of the state match or the state maintenance of effort. The agency has reasoned that since Congress stipulated that federal funds could not be used for cost-sharing, then state cost-share funds cannot be counted as part of a state's NPS program. We fail to see any logic in this interpretation. District experience shows that cost-sharing is an integral part of any program to institue changes in land use; changes that must occur if we are to see significant reductions in NPS pollutant loadings. We urge you to include language in your report directing the agency to include state soil conservation program funds, including cost-share funds, as counting towards a state's NPS program efforts.

We also suggest that this subcommittee look for other ways to help states get NPS best management practices installed on the ground. Perhaps even more important than federal cost-sharing for farmers is technical assistance. Our experience has shown that the only successful way to get land managers to install conservation practices is to provide them with technical assistance. The same holds true for nonpoint source pollution abatement work. In our judgement any federal NPS plan must also include a technical assistance component, and we believe that USDA's Soil Conservation Service can and should support state efforts in this area.

For FY89, we recommend that this subcommittee appropriate through Section 304(k) a transfer of $25 million to SCS for NPS technical assistance activities.

We suggest that the transfer be to SCS for several reasons. First, this agency has more experience than any other federal agency in delivering technical assistance to land managers. They also have the existing field office structure to reach the entire country. They already have a strong working relationship with state and local governments and conservation districts, whose cooperation will be essential to a successful NPS control program. Such a transfer of funds allows us to efficiently utilize an existing network to accomplish our new goals.

I want to emphasize that these funds would not be used to duplicate any other NPS programs at the federal, state or local level. Just as with our federal soil conservation programs, SCS would use these NPS technical assistance funds to complement and support state and local programs. An appropriation of $25 million would provide for an additional estimated 625 technical field personnel. At this level, we believe that SCS could address some of the critical NPS areas such as the Chesapeake Bay, Puget Sound, Great Lakes, Gulf Coast and the Clean Lakes programs. Once all state NPS assessment reports are into EPA, we will be able to more accurately assess the workload on a national level.

Clean Lakes Program

The last program I would like to address today is the Clean Lakes program. This program, authorized in Section 314, is designed to assist in the clean up of publicly-owned freshwater lakes. Since the program began in 1975, EPA has provided funding for 40 classification studies, 114 Phase I studies and 159 Phase II demonstration projects.

The program uses an integrated approach to cleaning up these important water bodies. Projects funded through the program include efforts to promote changes in land uses within the lake's watershed, such as changes in farming techniques to reduce NPS pollution, and protecting lake shores from over development. In addition, the program has resulted in better treatment of sewage effluent and improved management of stormwater and septic systems. These activities are complemented by such on-lake activities as oxygenation of the water, harvesting of vegetative growth, and chemically removing nutrients.

The program is also an efficient way to utilize federal funds. Recent surveys indicate that there are $8 of benefits for every $1 expended under Section 314. These benefits include improved and increased recreational opportunities, increased economic health of the area, an increased public awareness of how man's activities effect the environment, and improved water quality.

There is currently a large back-log of projects waiting to be funded. While conservation districts know that we can't take care of all of them at once, we believe that this program must continue to move forward if we are to ever meet the goals in the Clean Water Act for fishable and swimmable water bodies. NACD urges you to appropriate $15 million for the Clean Lakes program in FY1989.

In addition to these programs, Mr. Chairman, our association also recommends that $23 million be appropriated for water quality management work through Section 205j and that $72 million be allocated for state programs grants (Section 106).

Thank you for the opportunity to appear before you today. I would be happy to answer any questions you may have.

NACD FY89 FEDERAL FUNDING RESOLUTION
ADOPTED BY THE NACD COUNCIL
42nd ANNUAL CONVENTION
JANUARY 31 - FEBRUARY 4, 1988
LITTLE ROCK, ARKANSAS

	FY 88 APPROPRIATION	PRESIDENT'S FY 89 BUDGET	FY 89 NACD RECOMMENDATION
		(in millions)	
SOIL CONSERVATION SERVICE			
Conservation Operation	443.9	455.2	475
River Basins	12.1	9.8	12
Watershed Planning	8.7	8.2	12
Watershed Operations	160.8	95.4	200
RC&D's	25	25	35
Great Plains	20.5	6.0	22
TOTAL SCS	676.1	599.6	756
FUNDS TRANSFERED TO SCS			
Office of Surface Mining (RAMP)	15.0	0	20
NPS Technical Assitance (304 k)	0	0	25
AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE			
Conservation Reserve	1,131.0	1,864.0	2,200
ACP	176.9	0	200
FIP	11.9	0	13
Water Bank	8.4	0	10
Colorado River Salinity Control Program	4.9	0	5
AGRICULTURAL RESEARCH SERVICE			
Soil & Water Conservation Research	60.8	66.6	67
ANIMAL AND PLANT HEALTH INSPECTION SERVICE			
Animal Damage Control	24.4	13.0	25
COOPERATIVE STATE RESEARCH SERVICE			
Hatch Act	155.5	155.5	155
McIntire-Stennis	17.5	13.0	18
Rangeland Research	.5	0	1
COOPERATIVE EXTENSION SERVICE			
General Formula Funds	241.6	228.5	242
Earmarked Programs	73.8	68.2	74
Renewable Resources Extension Act	2.8	2.8	15

	FY 88 APPROPRIATION	PRESIDENT'S FY 89 BUDGET	FY 89 NACD RECOMMENDATION
		(in millions)	
FOREST SERVICE			
Forest Pest Management	41.0	28.1	41
Rural Fire Protection	13.8	3.9	14
Forest Management & Utilization	10.8	0	15
Range Management	29.2	26.3	29
Range Betterment Fund	3.6	3.9	4
Wildlife & Fish Habitat Mgmt.	47.4	45.4	59
FARMER'S HOME ADMINISTRATION			
Rural Community Fire Protection	3.1	0	3.1
Soil & Water Loans-Direct	11.0	0	14
Soil & Water Loans-Guaranteed	3.0	0	0
Watershed Protection & Flood Prevention	7.9	0	8
RC&D Loans	1.2	0	1.2
ENVIRONMENTAL PROTECTION AGENCY			
Water Quality Management (205J)	23.0	7.5	23
Clean Lakes Program	9.5	0	15
State Programs Grant	62.1	62.1	72
Sec. 319 NPS Grants	0	0	100
Sec. 304K NPS Tech. Assistance (Transfer to SCS)	0	0	25
BUREAU OF LAND MANAGEMENT			
Soil, Water & Air Management	20.0	25.9	26
Grazing Management	33.9	33.9	35
Wildlife Habitat Management	18.5	14.9	21
Wild Horse & Burro Program	14.8	7.5	15
U.S. GEOLOGICAL SERVICE			
National Mapping, Geography and Surveys	90.9	90.0	91
Water Resources Investigations	149.8	133.3	150
FISH AND WILDLIFE SERVICE			
Fishery Research & Development	13.2	11.8	13
Fish Hatcheries	26.2	26.4	26
Refuge Fund	5.6	5.6	6
Anadromous Fish Program	2.0	0	2
Cooperative Research Units	5.7	5.8	8
Fish & Wildlife Enhancement	1.2	1.2	5

STATEMENT OF RICK EGGE, NATIONAL UTILITY CONTRACTORS ASSOCIATION

ACCOMPANIED BY DAVID McDERMITT

CONSTRUCTION GRANTS PROGRAM CONTRACTORS

Senator PROXMIRE. The next witnesses are Mr. Rick Egge and Mr. David McDermitt from the National Utility Contractors Association. Mr. Egge will speak on the funding for sewage treatment construction grants.

Go ahead, sir.

Mr. EGGE. Thank you. Mr. Chairman, I represent an organization of companies involved in the construction of many of the projects financed by the EPA construction grants program.

In summary, a return to a funding level of $2.4 billion is needed in fiscal 1989. At the very least, an appropriation of $2.3 billion, equal to that of the current fiscal year, is imperative.

As contractors, we obviously have a vested interest in this funding, because we competitively bid on the projects it finances. In our opinion, however, the federal government must remain an active partner in financing the program.

Communities across the nation need this financial assistance to enable them to comply with the national municipal policy, which requires facility construction by July 1, 1988. The nation's major facilities are on schedule to meet this deadline, but they anticipate ongoing construction into the early 1990's.

Also, the Water Quality Act calls for the establishment of state revolving funds, or SRF's, to complete the transition from federal to state and local responsibilities. Several state programs now qualify to utilize their fiscal 1989 federal allotment as a source of capitalizing their revolving funds.

The major requirement needed to accomplish the goal of effective state funds is an adequate flow of federal dollars to capitalize them. Funding for the construction grants program was effectively reduced by $700 million over the 3-year period of fiscal years 1986 through 1988. A full appropriation of $2.4 billion is necessary if an orderly transition from federal grants to state revolving funds is to be achieved.

FEDERAL PAYMENT METHOD

Finally, there is the critical issue of the payment method used by the federal government to finance state revolving funds. It is clear from legislative history that the intent of the Water Quality Act was to require cash payments to the states to capitalize their funds.

The act gives states flexibility to leverage their Federal payments through creative financing methods and for other purposes. This flexibility was given to states with one clear purpose in mind: to maximize the use of federal cash payments.

This would create a pool of construction funding significantly greater than what would be available under a continuation of the federal grants program.

The letter of credit payment method announced late last year by the Office of Management and Budget and the EPA is, in our view, a violation of the Water Quality Act. It will severely hinder the operation of state revolving funds because states will be restricted in their efforts to leverage their federal dollars.

We strongly urge this committee to include language in its appropriations measure that specifies cash payments by the federal government to capitalize SRF's. This would increase the rate of outlays from the Federal Treasury in the near term.

However, Congress clearly understood this impact when it enacted the reauthorization bill. It was viewed as a fair exchange in return for a total phaseout of a major federal grants program.

Unless Congress mandates cash payments, the ultimate success of the entire state revolving fund concept is in jeopardy. At this very time, in fact, several states are taking a hard second look at even establishing an SRF program.

In summary, Mr. Chairman. I respectfully urge this panel to appropriate $2.4 billion or $2.3 billion, at the very least, for the EPA construction grants program in fiscal 1989 and to mandate federal cash payments to the states.

Thank you for your kind attention, and we will be happy to try and answer any questions you have.

Senator PROXMIRE. Thank you very much, gentlemen. I think you did an excellent job, and we will do all we can to help.

[The statement follows:]

STATEMENT OF RICK EGGE, PRESIDENT, NATIONAL UTILITY CONTRACTORS ASSOCIATION

Mr. Chairman and members of the committee, the National Utility Contractors Association (NUCA) is comprised of 2,000 companies nationwide -- contractors, suppliers and manufacturers -- that specialize in wastewater treatment and water delivery construction projects. NUCA members lay the pipe and build the treatment plants necessary to achieve the goals set forth by Congress in the Federal Water Pollution Control Act. In short, it is our job to build the projects necessary to meet the "clean water" requirements mandated by Congress.

As a result of our experience in building many of the sewage treatment facilities financed by the funding appropriated by this committee for the EPA Construction Grants Program, I wish to take this opportunity to offer the underground utility construction industry's views on the program and to offer recommendations on fiscal 1989 funding for it.

Fiscal 1986-88 Funding

Before addressing myself to the question of fiscal 1989 appropriations for the program, I will take this opportunity to commend you, Mr. Chairman, and the other members of the subcommittee for your outstanding leadership in maintaining a level of funding in recent fiscal years adequate to enable the nation's water pollution control effort to move forward. As you are well aware, the 16-month delay in enacting legislation to reauthorize the Construction Grants Program prevented House and Senate appropriations panels from properly financing the program on a regular yearly basis. Fortunately, this panel was instrumental in appropriating "interim" funding necessary to keep the program up and running until reauthorization language was finally enacted into law in February of 1987.

Without the leadership of you, Chairman Proxmire, and that of Senator Garn and other members of the panel, the operation of this important program would have been seriously jeopardized. Your foresight prevented the shutdown of ongoing projects and delays in beginning new construction. NUCA publicly commends each of you for this achievement.

Fiscal 1989 Appropriations

In regard to the issue at hand -- fiscal 1989 funding for the EPA Construction Grants Program -- I must emphasize NUCA's staunch opposition to President Reagan's proposal calling for $1.5 billion in construction financing.

As you know, the Administration's request represents $800 million less than current fiscal year funding of $2.3 billion -- a staggering 35 percent reduction. A return to a funding level of $2.4 billion annually beginning in fiscal 1989 is necessary for the program to remain an effective tool in the nation's water pollution abatement effort. Given the impact of last year's deficit reduction agreement between Congress and the White House, an appropriation of $2.3 billion -- equal to fiscal 1988 funds -- is the bare minimum if the program is to remain a viable one.

I want to say at the outset that we, as underground utility contractors, obviously have a vested interest in the program and would hope to benefit from this funding by competitively bidding on the projects it will finance. The association feels that more of the funding burden must be assumed by state and local governments -- a requirement that is mandated in the years ahead by the Water Quality Act of 1987. The federal government, however, must remain a major partner in financing the program until the federal funding role is phased out in 1995, and a $2.4 billion appropriation for fiscal 1989 remains vitally important.

This committee is well aware of the results of the most recent EPA Needs Survey, which estimates that more than $60 billion in federal wastewater treatment construction work is needed for the current population. While EPA's bi-annual assessment has been viewed somewhat sceptically in the past as little more than State "wish lists," the 1986 survey is viewed by most observers as a fairly accurate assessment of current needs as a result of changes made in the survey's format.

$2.4 billion in fiscal 1989 funding is particularly important to assist municipalities in their efforts to comply with the National Municipal Policy. This provision of the law requires local governments to complete construction on facilities necessary to meet federal water quality standards by July 1, 1988.

EPA reports that the nation's "major" facilities in larger urban areas are on schedule to meet the 1988 deadline. However, one should not interpret that to mean their need for construction financing will end next July. Although they meet all requirements necessary to comply with the federal deadline, many local governments' schedules anticipate ongoing construction of their federally mandated systems into the end of this decade, with completion scheduled in the early 1990s. It is important, therefore, that the full $2.4 billion in funding authorized for the program in fiscal 1989 is appropriated.

State Revolving Funds

Full funding in 1989 is also important to enable several States to begin to capitalize their new State Revolving Funds (SRFs). As mentioned earlier in my testimony, State and local governments must assume a larger share of the funding burden in building these sewage treatment systems, particularly in light of the burgeoning federal budget deficit. The Water Quality Act will require just that by establishing a schedule and mechanism for completing the transition from federal to State and local responsibility.

The new law terminates EPA's authority to award new federal wastewater treatment construction grants to communities in fiscal 1990. The agency is given new authority to "capitalize" State Water Pollution Control Revolving Funds (SRFs) to enable States to provide construction loans and other financial assistance to municipalities.

NUCA was a strong supporter of the inclusion of this provision in the Water Quality Act and views the phasein of SRFs as a historic and beneficial development. Repayments from local governments to a State will create a reliable and ongoing source of construction financing for needed wastewater treatment works and, in the opinion of NUCA, will enable many more planned projects to go to construction.

The major requirement needed to accomplish the goal of financially sound and efficient SRFs, however, is an adequate source of federal funding to initially capitalize them. An appropriation of $2.4 billion for the program in fiscal 1989 is critical, therefore, in achieving an orderly phaseout of the federal role.

SRF Capitalization Grants

Another issue of crititcal importance to the ultimate success of State Revolving Funds is the payment method used by the federal government to finance them.

Mr. Chairman, there can be little doubt that the clear intent of the Water Quality Act was to require "cash" payments by the federal government to the States in order to capitalize their revolving funds. The Office of Management and Budget (OMB) and the Environmental Protection Agency (EPA) announced in late 1987, however, that SRFs will be capitalized by a "letter of credit." Under this mechanism, the federal government will enter into an agreement with a commercial bank from which a State may draw funds to reimburse communities for construction costs incurred. States are permitted to utilize this account as security for obligations issued by a State or to guarantee local obligations for wastewater treatment projects.

Although the Water Quality Act does not specify the specific form of payment to the States, it is clear from the legislative history of the reauthorization measure that "cash" payments were clearly intended. In particular, we reference Section 601(b) of Public Law 100-4, which deals with the "Schedule of Grant Payments" to States. Under this section, EPA and each State are to jointly establish a schedule of payments under which the agency will pay to the State the amount of each grant to be made to the State. The law specifies that "such payments shall be made as expeditiously as possible, but in no event later than the earlier of --

"(A) 8 quarters after the date such funds were obligated by the State, or
"(B) 12 quarters after the date such funds were alloted to the States."

The EPA contemplates cash outlays to the States for as long as 32 quarters under its "letter of credit" plan. This policy appears to clearly violate the Act's mandate that payments be made as quickly as possible within the timeframes cited above.

In addition to the questionable legal grounds upon which the "letter of credit" plan is based, there is little doubt that this method of capitalizing State Revolving Funds will severely hamper their effectiveness in financing vitally needed sewage treatment works nationwide. In fact, the OMB/EPA plan has already effectively thrown "cold water" on the entire SRF concept. Several States are reconsidering whether or not to participate in the federal program. Many more are implementing programs that are severely limited in regard to the amount of construction funds that will ultimately be realized from their revolving fund.

The overall negative impact of the "letter of credit" plan occurs in three major areas:

1.) STATES WILL NOT BE PERMITTED TO EARN INTEREST ON THEIR FEDERAL ALLOTMENTS. Although the Act permits State Revolving Funds to earn interest -- with the intention that this additional income will lower costs to municipalities for SRF construction loans -- it is simply not possible to earn interest on a "letter of credit."

2.) STATES WILL BE INHIBITED FROM "LEVERAGING" THEIR REVOLVING FUNDS. The Act states that revolving funds may be used "as a source of revenue or security for the payment of principal and interest on revenue or general obligation bonds issued by the State." As stated earlier, this provision is intended to encourage States to implement creative financing techniques in order to "leverage" federal allotments. By leveraging federal dollars, States would be able to realize a pool of construction funds significantly larger than the amount of the original federal payment.

Several prominent bond rating agencies indicate that a "letter of credit" represents nowhere near the security offered by "cash." Thus, a major impact of the "letter of credit" plan will be to significantly reduce the amount of construction funds available to the States, and it will result in increased local borrowing costs in the bond markets.

NUCA strongly urges the committee to specify "cash" payments by the federal government to capitalize State Revolving Funds. Only specific language will direct OMB and EPA officials to adequately carry out the goals of the Water Quality Act in terms of capitalizing SRFs.

We fully understand that the inclusion of this language will increase the rate of outlays from the Federal Treasury in the near term. However, Congress clearly understood this impact when it enacted the Water Quality Act because it was viewed as a necessary and equitable "trade off" in return for a total phaseout of a major federal grants program.

Unless Congress mandates "cash" payments, the ultimate success of the entire State Revolving Fund concept is in jeopardy.

Conclusion

In summary, Mr. Chairman, we respectfully urge this panel to appropriate $2.4 billion -- or a bare minimum of $2.3 billion -- for the EPA Construction Grants Program in fiscal 1989. Further, we urge you to mandate federal "cash" payments to capitalize State Revolving Funds.

This program is important, it is efficient and, above all, it is largely responsible for the documented improvement in the quality of our nation's waters. Thank you for granting us the opportunity to appear before you here today, and we will be happy to try to answer any questions you may have at this time.

STATEMENT OF PROFESSOR RICHARD GLAZER, WESTCHESTER COMMUNITY COLLEGE

ENVIRONMENTAL TRAINING FUNDS

Senator PROXMIRE. Our next witnesses will be Professor Richard Glazer, Dr. Armon Yanders, Dr. Anthony Cortese, Professor Wayne Pettyjohn, and Dr. Alfred Munzer. We will start off with Professor Glazer from Westchester Community College.

Mr. GLAZER. Thank you, Senator. It is a pleasure to be here today, and I wish to thank Senator Proxmire and his committee for providing me the opportunity to address a problem that has stunned the environmental training community during the 1987–88 fiscal year.

This problem is the major reduction of environmental training funds for the past fiscal year and the impact that the loss of these funds has had on the continuance of our environmental pollution control training programs.

As dean of mathematics, physical and engineering sciences and technologies at Westchester Community College, I have over the past years been fortunate to have been in the forefront of the development and implementation of a host of environmental training programs on both the local and national level.

During this period, we have had the assistance of Congress in maintaining these academic training funds. The programs that these funds supported have resulted in the environmental work force that serves us today. This work force has made our drinking water and wastewater control systems work. It monitors our waters, air, and soil; helps safeguard our environment from toxic and hazardous waste and forecasts our future training needs.

Unfortunately, last year, these funds were eliminated from the fiscal year 1987–88 EPA budget at the very last minute. This occurred at the same time the president of the American Academy of Environmental Engineers noted that the total number of graduates with bachelors and advanced degrees who have special training in hazardous waste issues will probably be 5 to 10 percent of the total needed in the next 5 years.

In addition, the small quantity generator regulations are just beginning to be implemented. The Superfund Amendment and Reauthorization Act of 1986 requires a highly sophisticated work force. The new Safe Drinking Water Act sets primary drinking water standards on 83 contaminants, and the Water Quality Act of 1987 requires state and local self-sufficiency by 1994.

I can go through a litany of environmental pollution control failures and disaster related directly to the lack of trained people in the environmental pollution control field.

My first-hand experience as supervisor, the chief elected official of my town with poorly trained waste treatment operators attest to this need. Our lack of trained personnel resulted in a brand new wastewater treatment plant being in continual noncompliance of its permit. This was not rectified until we were able to hire a trained professional who had graduated from a water pollution control 2-year degree training program.

This program had been established with EPA academic training funds. Within 2 months, the plant was in compliance; we had reestablished our credibility with the people of the town and justified the millions of dollars spent on the construction of the collecting system and the treatment plant.

I have often felt that if we were requesting $40 million rather than $4 million this program would be considered to be one worthy of continual support. It seems that our request of $4 million is considered by some to be so minimal that little can be accomplished with it.

WHAT $4 MILLION BUYS

Let me tell you what $4 million buys. Environmental scholarships; funds for young people to encourage them to specialize in environmental fields and make a career in the environmental areas; environmental training ships; funds to colleges and universities to support essential course offerings in environmental areas that may or may not attract large numbers of students but are essential to an overall balanced curriculum; hands-on courses intermingled with classroom courses and discussions; environmental fellowships; programs designed for persons already employed by state and local government agencies to advance their careers in their current positions; environmental curriculum development; exploration and development of new innovative and state-of-the-art curricula in environmental areas at universities, college, community college and high school levels; minority targeted activities; funds from minority fellowships at historically black colleges; high school apprenticeship programs to provide opportunities for disadvantaged high school students to explore environmental careers; EPA state minority and women's business procurement workshops to assist women and women-owned firms access to EPA contracts at the state and local level; modeling and forecasting; and studies to determine and forecast environmental work force needs due to new legislation, regulation and standards. This would also include the new ozone greenhouse effects.

National work force needs. A conference scheduled every 5 years brings together the public and private sector to determine future environmental work force needs. The next conference was scheduled for 1989.

The national hazardous waste work force study to determine existing work force capabilities and skills in hazardous waste management as well as the available training and education programs to meet these future needs. It is obvious the benefits of EPA's academic training programs are numerous.

Over the years, the program has stimulated the educational community to respond to the growing needs for professionals in the environmental fields.

What is even more rewarding is that most of these programs become self-sustaining after a period of time. The agency's work force development staff administers this program and targets the funds toward high-priority environmental needs in hazardous and toxic wastes, water, wastewater, soil, and air.

Here is a government program that certainly gives us a payback well beyond the initial funds spent. I, therefore, wish to recommend to the Senate that they expand the interdisciplinary training grant activity by $4 million. The $4 million, if necessary, could be shifted from programs in solid waste and in water quality.

I thank you for your time and your help, and I would be happy to answer any of your questions.

Senator GRASSLEY [presiding]. Before we proceed to Dr. Yanders, I would like to remind the witnesses of the 4-minute rule that we have and ask you to abide by it, because we are running considerably behind time.

Senator GRASSLEY. It is my privilege, after thanking you for your testimony, to welcome Dr. Yanders. He is the director of the Environmental Trace Substances Research Center at the University of Missouri and represents the Mid-Western Universities Alliance. Dr. Yanders will speak on funding for the National Institute of Environmental Health Sciences.

Would you proceed?

STATEMENT OF DR. ARMON YANDERS, DIRECTOR, ENVIRONMENTAL TRACE SUBSTANCES RESEARCH CENTER, UNIVERSITY OF MISSOURI, ON BEHALF OF THE MID-WESTERN UNIVERSITIES ALLIANCE

SUPERFUND BASIC RESEARCH PROGRAM

Dr. YANDERS. Thank you, Mr. Chairman. I am grateful for the opportunity to appear before the committee. I am here to urge the committee to provide funding at the authorized level for the Superfund basic research program that is administered by the National Institutes of Environmental Health Sciences.

This program was established by Congress in the Superfund Amendments and Reauthorization Act of 1986. It is specifically intended to deal with threats to human health and safety caused by toxic substances in the environment, particularly those associated with leaking waste disposal sites and Superfund sites.

I understand that my written testimony will be a part of the record, so I would like to emphasize several points which I feel are particularly important.

First, the problems to be addressed are major problems. This is reflected in the fact that Congress itself pointed out in the legislation several areas of public concern. My written testimony gives eight examples of the kinds of research that are needed to reliably assess the risks of environmental contamination, reduce the amount and toxicity of hazardous substances, and prevent adverse human health effects.

INTERDISCIPLINARY INVESTIGATORS NEEDED

Why is this particular program of research necessary when there are other possible sources? Because the problems which need to be attacked must pull together investigators from several different disciplines, among them physicians, chemists, engineers, and ecologists in ways that our traditional single project grants do not permit.

The NIAHS program has been well designed to do this because it requires that the program projects focus the attention of the specialists on the central issues which promise the greatest benefits.

The consequences of not doing the research, I think, are serious. They would be of two kinds: First, the danger of overlooking some hazardous sites which pose more serious threats than others, because we couldn't assess their toxicity correctly.

There are literally hundreds of Superfund sites that must be cleaned up, and we need to ensure that the most hazardous ones are addressed first.

A second consequence is that promising techniques for cleanup which are more cost effective than those now in use could not be adopted quickly. Although there are billions of dollars in Superfund, we need to make these billions of dollars go as far as possible. So the potential payoffs of the research to be done under this program are great.

Developing even one or two new innovative, cost-effective methods could free up many millions of Superfund dollars for cleaning up additional sites. In short, I feel that this program is a wise investment rather than an expenditure and urge the committee to appropriate the full $20 million authorized for fiscal year 1989. I thank you for your attention.

Senator GRASSLEY. Thank you very much.

[The statement follows:]

STATEMENT OF ARMON F. YANDERS, PH.D., DIRECTOR, ENVIRONMENTAL TRACE SUBSTANCES RESEARCH CENTER, UNIVERSITY OF MISSOURI

Summary of Request.

The University of Missouri requests that the Superfund Basic Research Program administered by the National Institute of Environmental Health Sciences be funded at the level authorized by Congress in the Superfund Amendments and Reauthorization Act of 1986. The research in this program focuses on the threats to public health and safety caused by toxic substances in the environment. It is needed to develop the most cost-effective methods to detect and deal with hazardous materials, and could result in substantial savings in the costs of cleanup of Superfund sites. The FY1989 request is $20 million.

Mr. Chairman, Members of the Committee,

On behalf of the University of Missouri, I urge that the Superfund Basic Research Program administered by the National Institute of Environmental Health Sciences (NIEHS) receive the full funding authorized by Congress for the program, which in FY 1989 is $20 million.

This program, established by the Superfund Amendments and Reauthorization Act of 1986 (SARA), is directed toward research that deals with the effects on health and the environment which stem from the uncontrolled release of hazardous substances, particularly those from leaking waste disposal sites. SARA legislation specifically mandates that the basic research program administered by the NIEHS include topics such as:

- Methods and technologies to detect hazardous substances in the environment.
- Advanced techniques for the detection, assessment, and evaluation of the effects on human health of hazardous substances.
- Methods to assess the risks to human health presented by hazardous substances.
- Basic biological, chemical, and physical methods to reduce the amount and toxicity of hazardous substances.

The wording of the legislation is a clear recognition that there is a widespread national concern about the threats to public health and safety that are posed by toxic substances in the environment. SARA established as a primary objective the expansion of the base of scientific knowledge needed for reliable assessment of exposure and health risks from environmental contamination, reduction in the amount and toxicity of hazardous substances, and prevention of adverse human health effects.

Indeed, there is much to be done. Among the areas of research judged to be critical by the NIEHS and specifically targeted for emphasis under the Superfund Basic Research program are the following:

- Development of methods to detect the lowest concentrations of chemicals which could pose toxic threats to humans, especially when the chemicals are found in complex mixtures.

- Establishment of dose-response relationships for pollutants likely to be found in the environment.
- Improvement of techniques needed for measuring and modeling movement and alteration of chemicals through the media surrounding the hazardous waste site.
- Development of sensitive methods that would be useful for human dosimetry, e.g., the identification of toxic chemicals in human tissues following environmental exposure.
- Detection of behavioral or neurological effects of low-level exposure to toxic chemicals.
- Studies of various physical and chemical parameters involved in thermal treatment and degradation of wastes.
- Investigation of alternatives to thermal destruction, including biological conversion, chemical conversion or neutralization, and new destructive techniques (e.g., employing ozone, ultraviolet light, etc.).
- Development of new techniques for minimizing the quantities of hazardous wastes produced and requiring disposal, as by use of concentrating steps, recycling, and conversion of toxic byproducts to usable materials.

The NIEHS program got off to a good start last year when it awarded grants to four institutions (Massachusetts Institute of Technology, the University of California-Berkeley, the University of California-Davis, and the University of Washington) for studies addressing certain health-related needs. The original plan was for these institutions to expand their existing programs this year, and a second set of institutions would receive grants after another round of competition. Unfortunately, however, because of severe constraints imposed on the Federal budget, only $5.915 million of the authorized $10 million was made available for the basic research and training program in FY 1988. Unless the full authorized funding is received for FY 1989, few or no new institutions can be funded, and the program originally visualized by Congress will be jeopardized.

There are some important and undesirable effects that can be foreseen if the program is so severely restricted in size, because a large number of promising areas of research will remain unexplored. In the second round of competition, the NIEHS received 33 applications containing more than 260 individual research projects, including some 150 biomedical studies, 40 in engineering research with about half of these dealing with biodegradation of toxic agents, over 30 in ecology, and more than 20 in hydrogeology. The NIEHS commented on these as follows:

> "These applications reflect our lack of understanding of the relationship between hazardous substances in the environment and their effects on human health. The number of substances and mixtures that have been identified in uncontrolled hazardous waste sites or have been inadvertently released is great; data on how they are changed as they migrate through soil, air, and water are limited. We have little understanding of how they enter the food chain and how they may otherwise be ingested, inhaled, or absorbed by people."

Of course, not all of the projects submitted could be funded even if the total authorized amounts were appropriated for the four years remaining in the program. But, for FY 1988, the $5.915

million must support the existing commitments ($4.186 million), leaving only $1.729 million for supplemental requests and new projects. This is not adequate to support even a tenth of the most promising new ideas.

What are the consequences of not doing the necessary research? They are of two kinds: first, there is the possibility that some sites which pose more serious health hazards will be overlooked because of inadequate or misleading tests as to their potential toxicity, while other sites which actually present less serious hazards will mistakenly be assigned a higher priority for cleanup. There are hundreds of sites which must be considered, and only a fraction of them can receive immediate attention. Those that are selected to be cleaned up first should be those which are judged to present the greatest immediate threat to public health and safety. We must have better methods for measuring these threats to insure the greatest possible accuracy in the decision-making process, and also to insure that we can accurately assess the human exposure associated with various cleanup options.

A second consequence is that promising techniques for cleanup which would be more cost-effective than existing technology could not be developed and adopted. It is generally agreed that even the billions of dollars in Superfund will not clean up more than a fraction of the known Superfund sites, and it is obviously in the national interest to make the dollars go as far as possible. Relatively small amounts invested in research on hazardous waste management and mitigation techniques could pay for themselves hundreds of times over even if only a few of the innovative methods proved to be practical.

In conclusion, we feel that there are compelling reasons to proceed with the important research areas identified by the Congress when it enacted SARA, and we urge that the full authorized amounts be made available for the Superfund Basic Research Program in FY 1989 and subsequent years.

Thank you for your past support, and for your consideration of these comments.

STATEMENT OF DR. ANTHONY CORTESE, DIRECTOR, CENTER FOR ENVIRONMENTAL MANAGEMENT, TUFTS UNIVERSITY

Senator GRASSLEY. Our next witness is Dr. Anthony Cortese; is that right?

Dr. CORTESE. Cortese.

Senator GRASSLEY. Cortese, and he is director of the Center for Environmental Management, Tufts University.

Would you proceed, please?

Dr. CORTESE. Thank you, Senator. I appreciate the opportunity to appear before your committee. I want to thank Chairman Proxmire and other members of the committee for previous support of the EPA and also for the Center for Environmental Management here at Tufts University.

I am here wearing two hats today. One is the director of the Center for Environmental Management at Tufts University, which is a multidisciplinary research, education, and policy center focused on solutions to problems of hazardous waste and toxic substances in the environment and also as a consultant to the Science Advisory Board of EPA and a former director of the Pollution Control Agency in Massachusetts.

CENTER FOR ENVIRONMENTAL MANAGEMENT

The Center for Environmental Management has been very busy in the last 3 years working closely with EPA and national scientific and policy experts. CEM has supported 45 research projects, conducted 10 national forums and conferences, and trained over 2,000 workers, school officials, and contractors in safe asbestos abatement techniques in schools and other public buildings.

I would like to urge your support for continued funding of the Center for Environmental Management in fiscal year 1989 so that we may continue the current work of the center and expand our efforts in areas that have been highlighted by the EPA and Congress.

As an example, the center has a major research effort in the development of a new ground water monitoring center using laser light and fiberoptics. This new technology, when fully developed, will provide sample detection and analysis at the source, eliminating the need for sample collection, storage, and handling. When developed, it could reduce the cost of monitoring by a factor of 5 and allow continuous monitoring of ground water quality, a major improvement in management of ground water resources, and incidentally, also, to be able to monitor CO2 in the ocean on a continuous basis.

ANIMALS USED IN ANIMAL TESTING

It will take another 3 years of fundamental research at a cost of $2 million to get this technology to a point where a private entity will be willing to develop it for commercial use. At the request of Congress and EPA this year, the center has initiated another major effort to perform research on and examine policy issues surrounding the use of animals in testing the safety of chemicals.

Through the Tufts Veterinary School, which has a long history of work in this area, the center will convene an expert group of scientists and animal welfare advocates to examine regulatory impediments to using existing alternatives which can reduce the number of animals in chemical testing.

CEM will also develop a research agenda for EPA on the development of alternative test methods to animals and will participate in the research program.

This important area of work will require long-term financial commitment to funding scientifically acceptable animal alternative methods.

For all the above reasons, we urge the Congress to continue support of the center and request an appropriation of $3.5 million in fiscal 1989. I would also urge continuing an expanded support for the Office of Research and Development in the critical work of risk reduction which is the central goal, after all, of EPA. That is what it is in business to do.

I have had the privilege of serving on a special committee of the EPA Science Advisory Board, which is examining a long-term research strategy for EPA. The Science Advisory Board Committee will shortly release its report and believes that environmental risk reduction is the central goal of EPA and that EPA must have a strong research program in risk reduction if we are to achieve the environmental mandates and goals established by Congress.

FOCUS OF OFFICE OF RESEARCH AND DEVELOPMENT

In addition to research and traditional risk reduction technologies, we believe that the Office of Research and Development should focus on other risk reduction strategies such as preventing pollution generation and recycling and should also develop a strong program in technology transfer and technical assistance and training.

This latter point is extremely important, considering that most of the environmental statutes that have been passed provide the major responsibility for implementation on the states, who require a strong technical assistance and training program in order to achieve their goals.

Moreover, many of the problems that we are dealing with today, such as radon, asbestos, problems in the home, nonpoint source pollution problems, are not amenable to commend control regulatory approaches and require technical assistance and training in order to achieve the goals.

In making these recommendations, the Science Advisory Board committee examined the crucial question of whether risk reduction research should be performed by a private sector or by EPA. The Science Advisory Board believes that EPA must perform risk reduction research if the nation is to achieve its environmental goals for several reasons, and I will not detail all of them but just highlight a few.

First there is insufficient economic incentives for the private sector to perform basic risk reduction research. Short deadlines for compliance with regulations encourage the use of existing off-the-shelf technology and not innovation.

Moreover, industry is not monolythic. There are so many sectors involved it will not be easy to get together to sponsor generic research. Finally, municipal wastewater and drinking water treatment are most often performed by municipal government which can hardly afford to carry out its existing responsibilities and certainly is not going to put much of an effort in research.

The most important thing, I think, is that the return and the benefit of EPA risk reduction research is great. Recent studies by EPA indicate that successful risk reduction technologies developed by EPA have saved the nation from $30 to $1,000 for every $1 spent by EPA.

Therefore, it is imperative that EPA have a strong risk reduction research strategy and adequate resources to implement that strategy.

Thank you for the opportunity to testify, and I appreciate, again, the support for the Center for Environmental Management.

[The statement follows:]

STATEMENT OF ANTHONY D. CORTESE, DIRECTOR, CENTER FOR ENVIRONMENTAL MANAGEMENT, TUFTS UNIVERSITY

I am Anthony D. Cortese, Director of the Center for Environmental Management (CEM) of Tufts University. I want to thank Chairman Proxmire and other members of the Committee for the opportunity to testify on the Fiscal Year 1989 budget of the U.S. Environmental Protection Agency. I also want to thank Chairman Proxmire and Mr. Tom van der Voort and Ms. Marion Mayer of the Subcommittee staff for their support of the programs of CEM.

The Center for Environmental Management at Tufts University is a multidisciplinary research, education and policy center focussed on solutions to problems of hazardous waste and toxic substances in the environment. The Center has three major goals: (1) improve understanding of the effects of hazardous waste and toxic substances on human health and the environment; (2) development of technologies, strategies and policies to minimize or eliminate the production of toxic and solid wastes and manage remaining products in a safe manner; and (3) development of improved programs for interaction and education among government, industry, students and the public. Working closely with EPA and national scientific and policy experts, CEM has supported 45 research projects, conducted 10 national forums and conferences for EPA and trained over 2,000 workers, school officials and contractors in safe asbestos abatement techniques in schools and other public buildings. Our programs have concentrated in four areas: (1) methods for detecting health effects of exposure to toxic substances; (2) improved assessment and management of hazardous and solid waste; (3) waste reduction and innovative waste treatment technology; and (4) risk assessment and management. Enclosed is a copy of CEM's 3rd Annual Report which summarizes our past efforts and a list of the projects currently underway.

I would like to urge your support for continued funding of the Center for Environmental Management in the Fiscal Year 1989 EPA budget so that we may continue the current work of the center and expand our efforts in areas that have been highlighted by EPA and the Congress. As an example, the Center has a major research effort in the development of new groundwater monitoring sensors using laser light and fiber optics. This new technology when fully developed will provide sample detection and analysis at the source, eliminating the need for sample collection, storage and handling. When developed it could reduce the cost of monitoring by a factor of five and allow continuous monitoring of groundwater quality, a major improvement in management of groundwater resources. It will take another three years of fundamental research at a cost of $2 million to get this technology to a point that a private entity will be wiling to develop it for commercial use. Similarly work in health effects, new management tools for sanitary landfills, risk communication and methods for evaluating the risks from release of genetically engineered organisms will require continuing and expanded support to accomplish the goals established for this work in FY-1989 and beyond.

At the request of Congress and EPA, CEM initiated another major effort in FY-1988 to perform research on and examine policy issues surrounding the use of animals in testing the safety of chemicals. Through the Tufts Veterinary School, CEM will convene and expert group of scientists and animal rights advocates to examine regulatory impediments to using existing alternative tests which can reduce the number of animals in chemical testing. CEM will also develop research agenda for EPA on the development of alternative test methods to animals and will participate in the research program. This important area of work will require a long term financial commitment to finding scientifically acceptable alternative test methods. For all the above reasons we at Tufts University urge the Congress to continue funding the programs of CEM and request an appropriation of $3.5 million in FY-1989.

I would also urge continuing and expanded support for the Office of Research and Development (ORD) in the critical work in risk reduction strategies, the central goal of EPA. I have had the privilege of serving on a special committee of the EPA Science Advisory Board (SAB) which is examining a long term research strategy for EPA. The SAB committee which will shortly complete its report believes that environmental risk reduction is the central goal of EPA and that EPA should have a strong research program in risk reduction strategies. Utilizing both intramural and extramural resources, ORD should expand its current efforts in risk reduction research to address core environmental problems such as alternatives to land disposal, improved combustion and hazardous waste cleanup as well as those needed to meet immediate regulatory needs. In addition to research on traditional risk reduction technologies, ORD should focus on other risk reduction strategies such as preventing pollutant generation and recycling (See Table 1) and should also develop a strong program in technology transfer and technical assistance. The latter point regarding technology transfer is crucial to the nation's efforts in achieving the environmental mandates of Congress. Recently, an EPA task force on technology transfer appointed by Administrator Thomas ("Report on the Administrator's Task Force on Technology Transfer and Training," December 1, 1987) articulated the concept as essential to the EPA mission.

> "The evolution of environmental programs has changed the climate and conditions under which EPA operates, challenging the Agency to adapt to these new conditions and expand its role to meet new needs. As the environmental programs of the 1980s develop and mature, more of the work in environmental protection is being carried out in the field by the EPA Regional Offices and State and local government agencies. In addition, the Clean Air Act, Resource Conservation and Recovery Act (RCRA) Superfund (CERCLA), Safe Drinking Water Act, and Clean Water Act all mandate more involvement by State and local governments in implementing the statutes. This evolution has a significant impact on EPA's approach to carrying its mission, prompting it to extend its role beyond its traditional focus on enforcement and regulation to a renewed emphasis on technology transfer and training as means of accomplishing environmental protection goals.
>
> "Compliance with environmental regulations can be more readily accomplished in monitoring and enforcement activities are combined with a program of technical assistance and training. Further, many areas of environmental concern, such as the radon

> and nonpoint source water pollution problems, do not lend themselves to the traditional regulatory and enforcement approach; in these cases, technology transfer and training can provide a mechanism for the development of positive solutions that draw on the unique strengths of all parties involved. EPA, working in partnership with the States, must take action to legitimize the importance and integral nature of technology transfer and training to its mission. As the Agency continues to evolve and mature, technology transfer and training must become core elements in supporting the Agency's operations and interactions with the states and local government, industry, and academia."
>
> "Further, the Task Force believes that failure to incorporate such an emphasis throughout the Agency will undermine the effectiveness of the Agency's regulatory and enforcement efforts, and related activities at the State and local level."

In making these recommendations the SAB committee examined the crucial question of whether risk reduction research should be performed by the private sector or by EPA. The SAB committee has concluded that EPA must perform risk reduction research if the nation is to achieve its environmental goals for several reasons. Research and development is in part a "public good" as evidenced by studies which demonstrate that many successful innovations come from ideas generated outside the firm which develops the innovation. There is also insufficient economic incentives for the private sector to perform basic risk reduction research. Such research has a low chance of commercial success. Short deadlines for compliance with regulations encourage the use of existing technology. No one company or industry is likely to have a unique, important stake in many environmental issues thus making individual action hard to justify to management or investors. Industry is not monolithic; there are so many sectors involved it will not get together to sponsor generic research. The industrial sector has little economic incentive to develop technologies which significantly reduce the emission to pollutants below regulatory levels, knowing that such technology may result in lower emission standards for all industry. In addition, most pollution control companies do not have the financial strength to devote significant resources to research and development. Moreover, municipal wastewater and drinking water treatment are most often performed by municipal government which can hardly afford existing technology and has traditionally invested very little in research and development. Finally, EPA risk reduction research can provide large economic, health and environmental returns. Recent studies by EPA indicate that successful risk reduction technologies developed by EPA have saved the nation from $30 to over $1,000 for every dollar spent by EPA. Therefore, it is imperative that EPA have a strong risk reduction research strategy and adequate resources to implement that strategy.

I would urge your Committee to take a special look at the proposed EPA budget for FY-1989 to be assured that there is adequate funding for a strong risk reduction strategy that includes increased support for pollution prevention and technology transfer and training. Thank you for the opportunity to testify before your Committee and again thank you for your support of the programs of the Center for Environmental Management at Tufts University.

TABLE I. EXAMPLE RISK REDUCTION STRATEGIES[1]

	INDIVIDUALS	GROUPS[2]	INDUSTRY	OTHER INSTITUTIONS[3]
PREVENTING POLLUTANT GENERATION	Energy and water conservation	Car pooling	Raw material substitution	Purchase of biodegradable products
	Purchase non-hazardous household products	Integrated pest management	Process redesign	Purchase of recycled products
	Organic gardening	Land acquisition for environmental protection	Product redesign	Zoning to protect critical resources
RECYCLING AND REUSE	Reuse of paint cleaners	Community solid waste recycling	Solvent reclamation	Paper recycling
	Trade in used car batteries	Oil recycling	Use of scrap iron in steel making	Commercial glass recycling
	Donate unused paint to school art department	Community hazardous waste recycling	Kraft process for chemical and energy recovery in pulp making	Use composted yard waste for fertilizer
TREATMENT AND CONTROL	Asbestos removal	Water supply treatment	Solid and hazardous waste incineration	Co-composting sludge and solid waste
	Auto inspection and maintenance	Community composting	Air pollution control devices	Wastewater treatment
	Heating system maintenance	Landfill wood chipping	Accident prevention programs	Chemical inventory, audit and control systems
REDUCE RESIDUAL EXPOSURE	Home ventilation for radon, gas stoves	Proper sanitary landfill	Secure chemical landfill	Smoke free work areas
	Home water filtration devices	Land use planning	Pollutant dispersion technologies	Proper building ventilation
	Don't fish in polluted waters	Household hazardous waste collection	Controlled pesticide application	Purchase bottled water

1. Many of these strategies, e.g., energy conservation, can be employed by all

2. Communities, community groups

3. Federal and state government, academia, health care institutions, commercial business, etc.

STATEMENT OF WAYNE A. PETTYJOHN, HEAD, SCHOOL OF GEOLOGY AND SUN PROFESSOR OF HYDROGEOLOGY, OKLAHOMA STATE UNIVERSITY

SHORTAGE OF HYDROGEOLOGISTS

Senator GRASSLEY. Our next witness is Dr. Wayne Pettyjohn, who is head of the School of Geology of Oklahoma State University. I need to tell you that Senator Nickles was hoping to be here to introduce you, and we expected him, but he could not come.

So I want you to know that he was thinking of you and planning on being here. you may proceed.

Mr. PETTYJOHN. Thank you, Senator. There is a severe shortage of ground water geologists or hydrogeologists in the United States today. This is largely the result of federal environmental legislation. The need is estimated at 10,000, and only about 50 are graduated from universities each year.

Often, government agencies and private employers are forced to hire biologists or chemists or the like or even individuals with no scientific background at all, and then place these individuals in positions of responsibility for ground water protection and cleanup.

Oklahoma State University has developed a plan to train hydrogeologists to alleviate the shortage. This plan includes retraining available petroleum geologists, and nationally, approximately 25 percent of the petroleum geologists are either unemployed or underemployed. This is a cost-effective way of producing a new work force, because petroleum geologists already have a good understanding or a good feel for the subsurface, and in addition, this would be an investment that would have a payback or could have a payback in a very short period of time.

In addition, it would transfer the unemployed from the assistance rolls to the tax paying status again.

We view this program as a joint venture between the public and the private sectors. We are attempting to raise $1 million from private sources, and we need another $1 million. The first year requirements for this program are $400,000. Because of the rarity of facilities and qualified instructors and the expertise and experience that we have already amassed at Oklahoma State, I think it is important that the program be funded there.

We have had a number of endorsements from a diverse group of organizations, including the American Petroleum Institute, the National Water Well Association, the League of Women Voters, as well always several state and federal agencies and industries, and we also have an officer of the Sierra Club sitting on our advisory board.

PROBLEM AREAS

Now, perhaps to place in a little better perspective the role of a hydrogeologist, one who deals with ground water and ground water contamination, we need to look at potential sources. For example, 50,000 people a year die of waterborne disease. Ten percent of the people who die in Mexico every year die from diarrhea, which is brought about by drinking contaminated water or food or air. In New Mexico alone, there is an estimated 100,000 abandoned wells that need to be plugged before more children fall in them.

There are some 875,000 underground fuel storage tanks that are assumed to be leaking. There is some 54,000 underground storage tanks that contain hazardous materials that need to be monitored.

So the roles that the hydrogeologists can play or could play are significant. They could offer a means whereby we could protect the environment rather than cleaning up afterwards, which is, by far, a more cost-effective method.

I appreciate your time.

Senator GRASSLEY. Thank you very much.

[The statement follows:]

STATEMENT OF WAYNE A. PETTYJOHN, HEAD, SCHOOL OF GEOLOGY AND SUN PROFESSOR OF HYDROGEOLOGY, OKLAHOMA STATE UNIVERSITY

SUMMARY

REQUEST FOR FUNDING
HYDROGEOLOGIC TRAINING
OKLAHOMA STATE UNIVERSITY

There is a severe shortage of hydrogeologists in the United States today. This is a result of federal environmental legislation.

OTA's *Superfund Strategy* (April, 1985) documents the shortage of professionals for Superfund sites, listing ground-water hydrologist as the job category requiring the most additional manpower. The OTA study pertained only to Superfund sites; it does not include the personnel needs of state and federal agencies nor private industry to be able to respond to the mandates of federal legislation and regulations for ground-water protection and restoration. An expansion in the number of available hydrogeologists is critical to the effective implementation of regulations. **Estimates from the Congressional Research Service show a need for 10,000 hydrogeologists to protect and restore ground water.**

Although officials of the Environmental Protection Agency have expressed a need for further hydrogeoogic training, they have explained there is no money available for such training. Therefore, we are requesting funds from the federal government, since the shortage of hydrogeologists stems primarily from federal legislation and since **an investment in environmental protection will benefit the entire nation. An additional benefit from the federal investment would be the retraining of unemployed petroleum geologists as hydrogeologists; this would result in transferring them from unemployment assistance to the tax rolls.** The payback will be many times the investment.

We are attempting to raise funds from private sources as well as federal. We view this as a cooperative venture between the public and private sectors. In order to train sufficient hydrogeologists to make a difference, we need $2,000,000 over a three-year period. We are attempting to raise $1,000,000 from private sources. **The first-year needs from federal sources would be $400,000.**

Because of the rarity of qualified instructors elsewhere and the expertise already amassed at Oklahoma State University, it is essential that the program be funded there.

I am Wayne Pettyjohn, Head of the School of Geology and Sun Professor of Hydrogeology at Oklahoma State University. I am a Fellow of the NATO Committee on Challenges of a Modern Society, immediate past chairman of the Hydrogeology Division of the Geological Society of America, immediate past member of the National Academy of Sciences/ National Research Council's Water Resources Research Committee, and chairman of the Science Advisory Committee of the Underground Injection Practices Council. A vita is provided for further information.

My purpose in testifying is to provide information on the shortage of hydrogeologists in the United States and to request funding for a program designed to alleviate that shortage.

The Environmental Protection Agency, among other agencies, has expressed a need for hydrogeologic training, but has explained that no funds are available to support the training. A copy of a letter to that effect is submitted for the record.

Shortage of Hydrogeologists

The Congressional Research Service of the Library of Congress has estimated a need for 10,000 hydrogeologists to protect and restore contaminated ground water. An article from *Geotimes* references this, and is provided as documentation.

The Office of Technology Assessment has identified ground-water hydrology as the job category requiring the most additional manpower to handle Superfund clean-up sites. In its *Superfund Strategy*, published in April, 1985, OTA stated a need for 8,000 additional professionals trained in the geosciences in the ten-year period 1985-1995. *These figures are* *for Superfund sites only* and do not include the federal and state needs for regulatory and planning personnel, nor the additional personnel needs of private industry to comply with the mandates of federal legislation and regulations for ground-water protection and restoration.

Industry publications are full of advertisements for hydrogeologists; there has been a tenfold increase in the last five years. I get phone calls almost weekly asking me if I can recommend someone who might be available for work as a hydrogeologist.

It is estimated that only about 750 highly diversified hydrogeologists exist in the United States today. And only 50 or so are graduated from universities each year.

Well-trained professionals are needed to ensure that ground water is protected during the process of manufacturing as well as that of recovering and developing energy resources. Additional needs include designing hazardous waste treatment and disposal facilities and schemes for aquifer restoration. Not only are technical skills a necessity, but an understanding and appreciation of the fragility and finiteness of the resource is imperative. Most ground-water contamination has resulted from a lack of understanding of conservation practices and the cause-effect relationship of certain activities.

Hydrogeologists are needed at entry level to perform technical tasks, and managers are needed to devise short- to long-term plans for ground-water protection.

Further Training Necessary

In addition to the need for additional hydrogeologists, a need exists for supplemental education of personnel already employed in industry and government. Often, because of the shortage of hydrogeologists, companies and government agencies are forced to hire an employee with a degree in biology, chemistry, zoology, or the like and then place that person in a position of responsibility for ground water, which can be an exceedingly costly option, a cost that, in the long run, is borne by the taxpayer and consumer.

Inadequate training is costing industry and taxpayers millions of dollars because decisions made by some *regulatory* personnel are often based on limited knowledge and expertise in ground water. More practical and less costly solutions could be devised if individuals in decision-making capacities had a good understanding of the physical systems affecting ground water and controls on contamination. Further, the *regulated* community (industry and others) is in serious need of training since they are forced to pay the costs of monitoring, construction, restoration, etc. Because of a lack of knowledge and confidence, they cannot effectively argue for a common-sense and, at times, a more ecologically-sound approach to the solution of perceived problems. A well-trained cadre of ground-water professionals would benefit the nation by reducing environmental costs and therefore the ultimate cost of the product. This, in turn, could make America more competitive in world markets.

Proposed Solution

I have developed a plan to begin to meet the need for additional hydrogeologists. It is composed of four components: 1) classroom instruction, 2) field investigations, 3) independent study aids, and 4) seminars, short courses, and workshops.

Obviously, the best plan is useless without manpower. However, there is a well-educated, potential work force available that, with a relatively short period of training, could begin to alleviate the shortage of hydrogeologists. As a result of the downturn in the oil industry, 25 percent of the petroleum geologists in this country are unemployed. Because they already have a good understanding of the subsurface, these professionals could be retrained as hydrogeologists at a modest cost and in a relatively short time. They are already experienced in business matters and with the practical orientation of this training, they would be immediately useful to their employers without the usual lag time required for young, ,inexperienced new hires.

As mentioned, an intensely practical approach is utilized in this program. Theory is supported by case studies and a "hands on" approach to learning. Students use computers to model actual cases of ground-water flow and migration of contaminant plumes, to determine rates of retardation for pollutants, etc. Classroom instruction is supplemented by exposure to field conditions. This course of training calls upon a number of disciplines: geology, soil science, chemistry, engineering, microbiology, and law.

The plan for training includes a six-week, on-campus instruction/field-work session as well as other components. Classes would occupy 40 hours a week. Several experts have agreed to serve as instructors for the course. Most have national or international reputations, either as individuals or as personnel within laboratories, such as the Robert S. Kerr Environmental Research Laboratory. We anticipate training 30 students at each 6-week session. Additional funding will permit an enlarged enrollment.

Another component of the training plan includes independent study aids to be made available to people desiring to augment their current hydrogeologic skills. This might include employees of EPA, other federal and stage agencies, and industry--anyone who cannot leave his/her current employment for extended periods. These independent study aids would include videotapes, correspondence courses, and slide/tape study courses. They would be accessible both personally and by mail.

A final component includes seminars, workshops, and short courses.

Investment

This program is an investment in environmental protection and human resources. It can be likened to the GI Bill of earlier times. For a token investment, there will be an enormous payback--not only in preservation of the environment, but in dollars and cents. Turning under- and unutilized human resources into productive employees who are taxpayers, as contrasted to receiving assistance at taxpayer expense, makes sense.

Cooperative Venture

We are not simply asking for a handout. We view this as a joint venture between the private and public sectors. We have received a gift from the Pew Charitable Trusts for $70,000 outright and a $30,000 challenge grant to be matched. We have received $15,000 from oil companies for developmental purposes, and are sending proposals to other foundations and corporations in an attempt to gain sufficient funding to turn out enough hydrogeologists to make a difference.

The total cost for a three-year pilot program would be $2 million. We are attempting to raise $1 million from private sources. A first-year investment of $400,000 from the federal government would permit us to launch the program and train the first group of students.

All funds will be used for salaries, supplies, and equipment necessary to carry out the proposed training as well as for stipends for books, tuition, and room and board for the students. No expenditures will be made for buildings.

Qualifications

The School of Geology at Oklahoma State University has the largest faculty with expertise in hydrogeology and hydrogeochemistry of any geology department in the nation: three full-time, two shared-time, and two adjunct faculty members, all of whom are full professors. The ground-water program in the OSU School of Geology is widely recognized and enjoys an excellent reputation.

Endorsements

This plan for training hydrogeologists has been widely endorsed -from groups as diverse as the American Petroleum Institute, the National Water Well Associatione, and the League of Women Voters. Copies of a few letters of endorsement are provided for the record; others are expected shortly.

Summary

This proposed program has the potential to help solve the shortage of hydrogeologists presently being experienced in the United States today. I urge you to give this program serious consideration.

JOB OUTLOOK IS GOOD FOR HYDROGEOLOGISTS

Hydrogeology is an interdisciplinary science that incorporates biology, chemistry, geology, math and physics. Hydrogeologists study the occurrence, availability, and character of ground water, and its relation with the environment.

Hydrogeologists investigate sites for waste disposal, for example, work that involves geologic and hydrologic mapping, geophysical surveying, monitoring well drilling, taking samples and measurements in the field, determining hydrologic and geologic boundaries, designing computer models of ground-water systems, interpreting results from models and from field evidence, and proposing action to protect ground water.

Ground water is a vital natural resource; its contamination is a serious environmental problem and the center of much public attention. Contamination has caused the closing of more than 2,800 public and private wells. In the next decade, federal, state and private sectors will spend large sums of money to clean up existing waste dumps and to reduce future contamination.

There is a severe shortage of hydrogeologists to work on ground-water problems. The Congressional Research Service, Library of Congress, has estimated that 10,000 hydrogeologists are needed to deal with the protection and cleanup of contaminated ground water.

Ground-water use has more than doubled in the last 30 years. That trend adds to the need for trained hydrogeologists.

Congress has passed legislation to protect ground water and clean up contaminated sites. 3 major laws were passed in 1986. The Safe Drinking Water Act amendments provide money for states to develop ground-water protection programs. The Superfund Amendments and Reauthorization Act provides $9 billion for cleanup in the next 5 years. The Water Quality Act, which amends and strengthens the Clean Water Act of 1971, will provide $18 billion for projects to reduce water pollution

The Department of Defense recently expanded its Installation Restoration Program to clean up ground water at military bases. The program, the equivalent of the Superfund program administered by the Environmental Protection Agency, is for 450 bases with an estimated 800 hazardous-waste sites. D.O.D. plans to spend $400 million for cleanup in 1987. The Department of Energy has similar programs to evaluate and clean up contaminated sites.

Many organizations need hydrogeologists for ground-water investigations: federal agencies like the U.S. Geological Survey and E.P.A., local and state agencies, environmental groups, consultants, private industry, international companies, and foreign governments.

U.S.G.S. is the country's primary geological research organization and E.P.A. regulates water quality and pollution control. The U.S. Army Corps of Engineers has authority over waterways. The Bureau of Reclamation develops multipurpose water projects in the West. The Soil Conservation Service works to conserve land and water resources. The Farmers Home Administration offers technical assistance to rural local governments—for new water systems or sewage-treatment plants, for example.

Other federal agencies also hire hydrogeologists. Some are the Bureau of Land Management; National Park, Forest, and Agricultural Research services; Bonneville Power Administration; Tennessee Valley Authority; and National Science Foundation.

Local and state agencies focus on water supply, waste disposal, recreation, and water management. Hydrogeologists are needed to work on scientific problems, and help run departments and make policy.

The Universities Council on Water Resources (310 Agricultural Hall, University of Nebraska, Lincoln, 68583) has published *Career opportunities in water resources.*

The basic educational requirement for employment as a hydrogeologist is a bachelor's degree in physical or natural science or engineering. Courses should include 5 semester-hours each of chemistry, physics, and differential and integral calculus, and 25 hours of the major subject. It may be necessary to study for at least a year beyond the bachelor's degree. The American Institute of Hydrology (3416 University Ave. SE, St. Paul, 55114) has information about requirements at different institutions.

Certification as a hydrogeologist requires professional experience. The A.I.H. requires at least 8 years after a bachelor's degree, 6 years after a master's degree, or 4 after a doctorate, and asks for a publication record.

Hydrogeologists can join professional societies such as the American Geophysical Union, American Institute of Hydrology, American Society of Civil Engineers, American Society of Testing Materials, American Water Resources Association, American Water Works Association, Association of Engineering Geologists, Geological Society of America, International Association of Hydrogeologists, and National Water Well Association.

Scientific reports about hydrogeology are published in many periodicals, including *Ground water, Water resources bulletin, Water resources research*, and publications of the societies. U.S.G.S. reports results of hydrologic research by Survey scientists in Water-Supply Papers, the Hydrologic Atlas series, the Techniques of Water Resource Investigation series, and other publications.

In 1983 the Survey began to publish *National water summary* annually as a Water-Supply Paper. Survey scientists discuss water events and issues, and each state has a section. The 1983 summary dealt with state water issues. The ground-water resources of each state were described in the 1984 summary, and surface-water resources in the recently published 1985 summary.

Two important books about hydrogeology are *Ground water* by R.A. Freeze and J.A. Cherry (Prentice Hall, 1979) and *Basic ground water hydrology* by R.C. Heath (U.S.G.S. Water-supply Paper 2220, 1984).

Large quantities of usable water support modern, industrialized civilization. In the U.S. we do not have a national water shortage, but regional shortages occur as population increases and people move to places that have little water. Human activity can contaminate water. Lack of good water can bring serious health problems and can cut food production. With proper management, nobody should have to be without usable water. Hydrogeologists help provide that management.

John E. Moore
U.S. Geological Survey, Mail Stop 444, Reston, Va., 22092

LETTER FROM L. LAWRENCE GRAHAM, CLASS V TASK FORCE, OFFICE OF DRINKING WATER, ENVIRONMENTAL PROTECTION AGENCY

April 14, 1988

Ms. Shari Dunn, Program Coordinator
Oklahoma State University
School of Geology
Stillwater, Oklahoma

Dear Ms. Dunn:

I have delayed in responding to your submission of an unsolicited proposal for a training grant until this time in the hope that funds might become available.

Your proposal to establish a training program to alleviate the critical shortage of hydrogeologists in the country is of great merit. There is a great need in all EPA programs, but especially for the Underground Injection Control Program for competent hydrogeologists to carry out field investigations and to assist local public officials in decision making. I am convinced that successful ground-water protection programs are possible only with the informed participation of local officials. They in turn are in continuing need of available and affordable professional guidance concerning local ground-water occurrence and movement.

I am sorry to inform you that no funds are available from our office at this time. Your project certainly provides essential training and I hope that you will be successful in obtaining funds elsewhere. If we can be of any assistance to you, or if you are able to mount the project with other sources of funding , we will be happy to work with you to coordinate your efforts with the needs of the Underground Injection Control Program.

Sincerely,

L. Lawrence Graham

L. Lawrence Graham
Class V Task Force
Office of Drinking Water

LETTER FROM JAY H. LEHR, EXECUTIVE DIRECTOR, NATIONAL WATER WELL ASSOCIATION

April 12, 1988

Dr. Wayne Pettyjohn
Department of Geology
OKLAHOMA STATE UNIVERSITY
151 Physical Science Building, Unit II
Stillwater, Oklahoma 74078

Dear Wayne:

It is a pleasure for me to have an opportunity to tell you what a wonderful job Oklahom State University is doing in retraining petroleum geologists for work in the ground-water industry. I recently had an opportunity to visit with the current group of petroleum geologists being trained in Oklahoma City. I reviewed, in detail, the curriculum being offered and found it to summarize the very best, sophisticated training being offered in our undergraduate and graduate programs in ground-water hydrology today. I spoke to and with the petroleum professionals and found their interest, enthusiasm, and expertise in converting to ground-water science was exemplary.

Oklahoma State University is doing a wonderful thing, both for the individual fortunate enough to enroll in this retraining program and also for the entire ground-water scientific community and the public which it serves because of the wonderful addition these professionals will make in our field. As everyone knows, interest and concern for the nation's ground-water resources has never been at a higher level. The need for highly-trained individuals is great. Scientific professionals are pouring into ground water from a variety of disciplines including biology, chemistry, mathematics, and civil engineering. In addition, many schools are now teaching rigorous curriculum in ground-water science providing new, young graduates each year. However, all these people lack broad professional experience in geologic science which, after all, must be considered the backbone of all the understanding of ground-water problems. Experienced petroleum geologists can, once trained in ground-water studies, bring to our field a level of awareness, responsibility, and professionalism not exhibited by many of the new people priorly described as entering our field. In my opinion this type of individual offers a new and needed dimension to our field which will assist us in solving the problems we face, and serving the public whose concern has caused a dramatic expansion in activities relating to ground-water development and aquifer protection.

You and Oklahoma State University are to be commended for the excellent program you have put on and should be urged to continue and expand that program for the benefit of everyone involved.

Sincerely,

Jay H. Lehr
Executive Director

LETTER FROM JAMES R. BARNETT, EXECUTIVE DIRECTOR, OKLAHOMA WATER RESOURCES BOARD

November 13, 1987

Dr. Wayne A. Pettyjohn, Head
School of Geology and Sun Professor
of Hydrogeology
Oklahoma State University
151 Physical Sciences
Stillwater, Oklahoma 74078-0451

Dear Dr. Pettyjohn:

On behalf of the Oklahoma Water Resources Board I'd like to strongly endorse your concept of establishing a center of excellence in hydrogeologic training. As the designated agency for the management and conservation of water resources -- both surface and ground water -- the Board is very much aware of the need for well-trained technical manpower. As you well know, there are few individuals with a strong background of training in ground water. Often, we have to hire an individual with a background in the biological sciences and then provide on-the-job training in ground water.

I believe the Board, as well as other state and federal agencies that have a role in the conservation and protection of ground water resources, would benefit greatly from the training you propose to offer. If the OWRB can assist you in bringing this idea to fruition, please let us know.

Sincerely,

James R. Barnett
Executive Director

LETTER FROM HAROLD F. ELKIN, SUN CO., INC.

November 12, 1987

Dr. Wayne A. Pettyjohn
Head, School of Geology and
  Sun Professor of Hydrogeology
Oklahoma State University
151 Physical Sciences II
Stillwater, Oklahoma 74078-0451

Dear Dr. Pettyjohn:

Sun Company strongly endorses your proposal to establish a center of excellence for training hydrogeologists to alleviate the shortage of professionals and to meet the need for further training of industry and government personnel.

Sun's preliminary support for your program was based on our awareness of the potential of the center for providing the much-needed training for groundwater scientists and your track record for excellence in this area. Our company has a commitment to conservation and protection of natural resources, and we endorse this proposed program because it will provide professionals who will serve the nation in protection and restoration of groundwater resources. These professionals are sorely needed in manufacturing and energy resource companies, consulting firms, and state and federal regulatory agencies.

Sun is also keenly aware of our societal responsibilities to assist education and research institutions in meeting the broad training needs of this emerging and critical field. We view this proposed center as a means for generating the necessary expertise to fulfill those responsibilities and are indeed hopeful that you can obtain the funding necessary to launch this important endeavor.

Sincerely yours,

Harold F. Elkin

Harold F. Elkin

/sm
cc: S. Dunn, Program Coordinator
    D. Lind

LETTER FROM CHARLES J. MANKIN, DIRECTOR, OKLAHOMA GEOLOGICAL SURVEY

April 13, 1988

Dr. Wayne A. Pettyjohn
Department of Geology
151 Physical Sciences
Oklahoma State University
Stillwater, Oklahoma 74078

Dear Wayne:

I have had an opportunity to review the proposal prepared by your Department for "A Center of Excellence in Hydogeologic Training." The proposal focuses upon a critical need, and I congratulate you and your colleagues for having the foresight to undertake such an effort. I strongly endorse your proposed activity and am prepared to assist in whatever manner possible to support your achievement of this important effort.

Your Department's focus on hydrogeology as well as your long and distinguished professional career in this field should present a compelling case for the support of this proposal. I can think of no other institution in this part of the country and few institutions in the nation that have the necessary intellectual resources to undertake this effort. I am confident that a critical review of this proposal will support this contention.

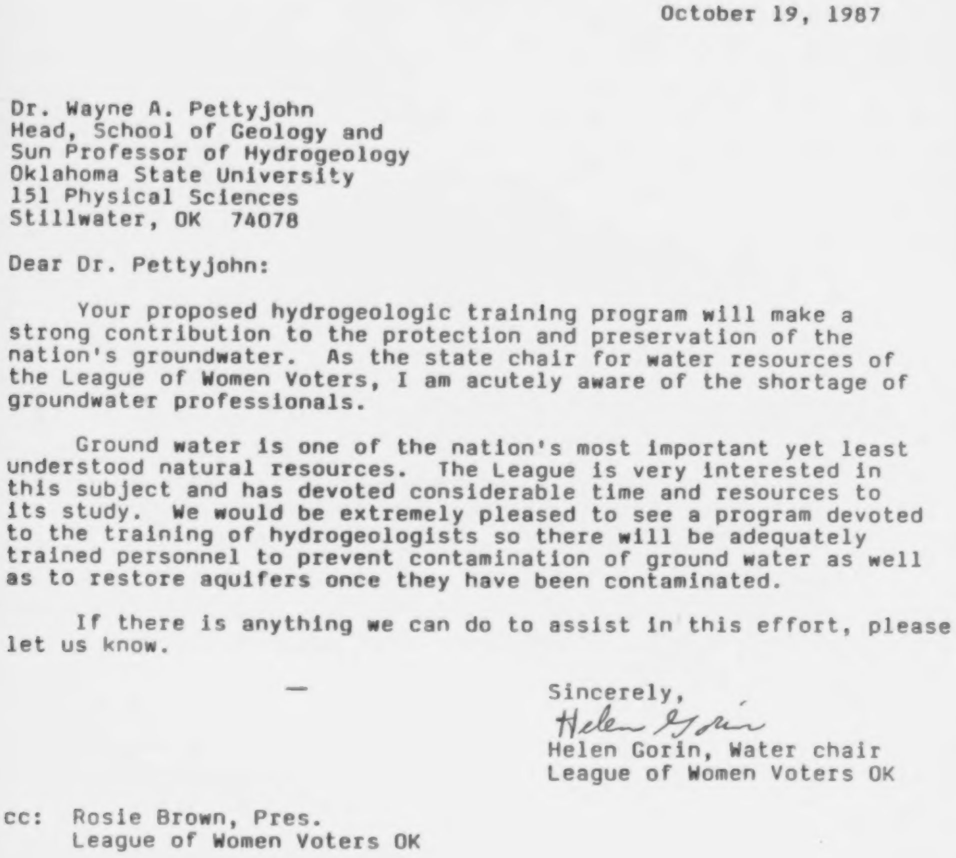
On behalf of the staff of the Oklahoma Geological Survey, please accept our sincere best wishes for success in this endeavor. My colleagues and I stand prepared to provide whatever assistance possible in support of your efforts to establish a Center of Excellence in Hydrogeologic Training.

Sincerely yours,

Charlie

Charles J. Mankin
Director

LETTER FROM HELEN GORIN, WATER CHAIR, LEAGUE OF WOMEN VOTERS OF OKLAHOMA



October 19, 1987

Dr. Wayne A. Pettyjohn
Head, School of Geology and
Sun Professor of Hydrogeology
Oklahoma State University
151 Physical Sciences
Stillwater, OK 74078

Dear Dr. Pettyjohn:

Your proposed hydrogeologic training program will make a strong contribution to the protection and preservation of the nation's groundwater. As the state chair for water resources of the League of Women Voters, I am acutely aware of the shortage of groundwater professionals.

Ground water is one of the nation's most important yet least understood natural resources. The League is very interested in this subject and has devoted considerable time and resources to its study. We would be extremely pleased to see a program devoted to the training of hydrogeologists so there will be adequately trained personnel to prevent contamination of ground water as well as to restore aquifers once they have been contaminated.

If there is anything we can do to assist in this effort, please let us know.

Sincerely,
Helen Gorin
Helen Gorin, Water chair
League of Women Voters OK

cc: Rosie Brown, Pres.
League of Women Voters OK

ENVIRONMENTAL PROTECTION AGENCY AND VETERANS ADMINISTRATION

STATEMENT OF DR. ALFRED MUNZER, AMERICAN LUNG ASSOCIATION AMERICAN THORACIC SOCIETY

Senator GRASSLEY. Our next witness is Dr. Alfred Munzer representing the American Lung Association and the American Thoracic Society. Dr. Munzer's testimony concerns the funding of the EPA's air program and the VA's medical research program.

Dr. MUNZER. Mr. Chairman, I am Dr. Alfred Munzer, director of critical care at the Washington Adventist Hospital, and in the active practice of pulmonary medicine. On behalf of the American Lung Association and its medical section, the American Thoracic Society, I appreciate the opportunity to comment on the proposed fiscal 1989 budget for the Environmental Protection Agency.

AIR PROGRAM

While our comments focus on the agency's air program and the research and development component within this program, our written testimony also includes our concerns with the fiscal 1989 appropriations for the Veterans Administration, with particular emphasis on the important but often overlooked lung research disease activities of that organization.

Our written testimony also expresses our support for the fully authorized level of funding for the university-based research and education program and a worker training program at the National Institute of Environmental Health Sciences established by the Superfund Amendments and Reauthorization Act of 1986.

UNC CLINICAL RESEARCH BRANCH

I wish to express the deep appreciation to this subcommittee for its leadership in providing $1.7 million in the current EPA budget toward the construction of suitable laboratory facilities to house the agency's clinical research branch of the University of North Carolina.

The branch is a unique scientific resource in which the effects of experimental exposure of human subjects to air pollution are studied. We urge the subcommittee to provide a 20-percent increase in the EPA air program budget above the level proposed by the President. This will provide additional needed funds for critical initiatives and the health effects research, risk management, and standard-setting and monitoring and enforcement programs for air quality.

In our written testimony, we deal more extensively with the air program and have selected those sections of the air program that require particular attention in our opinion. We have been as conservative as possible in our recommendations, probably too conservative.

HEALTH EFFECTS RESEARCH

I would like to focus for a moment on the $21.1 million proposed in the President's fiscal 1989 budget for health effects research. Health effects research support has essentially been stationary for the past 4 years. A 5-percent inflation rate alone would require a 23-percent increase just to maintain the program over a 4-year period.

Nevertheless, new areas of concern have arisen. For example, indoor pollution, including volatile organic compounds and their health effects; recognition of the importance of acidic aerosols in the outdoor air; recognition of stratospheric ozone depletion; recognition of a global warming trend and research on the health effects of hundreds, perhaps thousands, of more recently recognized environmental air contaminants.

RESEARCH NEEDS INCREASING

Thus, the recognized research needs in health effects of air pollution are even greater at this time than they were 5 years ago. A total of 117 million people live in 68 areas that are out of attainment with current standards. Clearly, a major infusion of research support is needed, both to support the work conducted at EPA's own health effects research laboratory and to support work in this area conducted by other scientists receiving cooperative agreements or contracts from EPA. Thank you.

[The statement follows:]

STATEMENT OF ALFRED MUNZER, M.D., ON BEHALF OF THE AMERICAN THORACIC SOCIETY OF THE AMERICAN LUNG ASSOCIATION

Mr. Chairman and Members of the Subcommittee, I am Dr. Alfred Munzer, Director of Critical Care at Washington Adventist Hospital and in the active practice of pulmonary medicine. On behalf of the American Lung Association (ALA) and its medical section, the American Thoracic Society, I appreciate the opportunity to comment on the proposed Fiscal Year 1989 appropriation for the Environmental Protection Agency. ALA's comments will focus on the Agency's Air Program, and the Research and Development component within this program. Our written testimony also includes ALA's concerns with the FY 89 appropriation for the Veterans Administration, with particular emphasis on the lung disease research activities. The significant contribution of the Veterans Administration in lung disease research is often overlooked, and we would hope that the subcommittee would seriously consider the need to provide adequate resources in this critical area. Finally, the written testimony, which the subcommittee has before it, includes the support of the ALA/ATS for the the fully authorized level of funding for the university-based research and education program and a worker training program at the National Institute of Environmental Health Sciences (NIEHS), established by the Superfund Amendments and Reauthorization Act of 1986 (SARA).

At the outset, Mr. Chairman, I wish to express deep appreciation to this subcommittee for its leadership in providing $1.7 million in the current EPA budget toward the construction of suitable laboratory facilities to house the Agency's Clinical Research Branch on the University of North Carolina's campus at Chapel Hill. The Branch is the clinical research arm of EPA's Health Effects Research Laboratory. It is a unique scientific resource in which the effects of experimental exposure of human subjects to air pollution are studied. Normal children and adults and patients with a variety of lung and heart diseases have been and continue to be studied in this facility.

The American Lung Association is urging the Subcommittee to provide a 20% increase in the EPA Air Program budget above the level proposed by the President. This across-the-board increase will provide additional needed funds for critical initiatives in Health Effects Research, Risk Assessment and Standard Setting, and Monitoring and Enforcement programs for Air Quality. It is particularly important that EPA target adequate resources toward addressing the continuing public health problem of air pollution. Currently, over 60 areas of the United States have failed to attain national air quality standards for ozone and carbon monoxide as mandated in the Clean Air Act. The health of over 100 million people living in these areas may, therefore, be adversely affected due to their continuing nonattainment status. Furthermore, new environmental impacts on health have been recognized --e.g., Indoor Air quality, Stratospheric O3 depletion, Global warming trend -- that require research attention. Inadequate budgetary support of the Air Program can only lead to neglect of programs that are vital to public health and failure to provide timely information critical to making decisions that can have economic impacts in the tens of billions of dollars.

In our written testimony we deal only with the Air Program and have selected those sections of the Air Program that require particular attention in our judgment. We have been as conservative as possible in our recommendations -- probably too conservative.

President's Proposed FY '89 Budget (in millions)		ALA Recommendation (in millions)
Air Program	$256.7	$308.0
Research and Development	72.5	87.0
Air Quality Planning and Standard Program	25.5	30.6
Regional Monitoring and Air Quality Management	23.8	28.6
Mobile Source and Stationary Source Enforcement	23.3	28.0
Health Effects Research	21.1	25.3

My presentation will focus on the $21.1 million proposed for Health Effects Research in the President's FY '89 budget as a prototype of the other areas.

Health effects research support has been essentially stationary for the past 4 years. A 5% per year inflation alone would require a 23% increase in dollars just to maintain the program over a 4 year period.

Nevertheless, new initiatives must be supported by the program. For example:

1) Indoor air pollution including volatile organic compounds and its health effects

2) Recognition of the importance of acidic aerosols in the outdoor air, and of their health-related effects

3) Recognition of the problem of stratospheric O3 depletion, and loss of our protective barrier against UV irradiation

4) Recognition of a global warming trend

5) Research in health effects of hundreds/thousands of more recently recognized environmental air contaminants -- e.g., methanol (gasoline additive or gasoline substitute).

Furthermore, our problems with most of the criteria air pollutants -- e.g., O3 SO2, NO2, CO, particulate matter -- are far from resolved. For example:

1) As previously mentioned, over 100 million people live in areas that are out of attainment with current standards. These standards represent a judgment based on currently available information on health effects. However, many areas of uncertainty remain especially in the realm of long term health effects. Emissions of NO2 and SO2 into the atmosphere continue to rise. In view of the expense and other socio-economic difficulties that will be entailed in reaching compliance with existing standards, it seems essential to be as certain as possible of the risks entailed in non-attainment of the current standards.

2) Interactions between acid aerosols (particulate matter) and other air pollutants (e.g., ozone) remain to be explored. Likewise, the interaction between ozone or nitrogen oxides and organic contaminants needs attention.

3) Discrepancies between some results of epidemiologic studies of real life health effects of air pollution and controlled exposures in environmental chambers need clarification and resolution.

Thus, the recognized research needs in health effects of air pollution are even greater at this time than they were 5 years ago. Clearly, a major infusion of research support is needed both to support work conducted at EPA's own Health Effects Research Laboratory, and to support work in this area conducted by other scientists receiving Cooperative Agreements or Contracts from EPA.

In concluding this oral portion of my testimony, I would remind the Subcommittee that, since 1981, the EPA Air Program has sustained significant budget reductions despite occasional marginal increases in selected program initiatives. These insufficient budgets continue to manifest themselves in the prevailing nationwide nonattainment problem for criteria air pollutants as well as inadequate resources to evaluate more recently recognized air pollutants. We urge the Subcommittee to continue as it has in the past to recognize the Agency's needs and exercise leadership in reevaluating the President's budget request.

Senator GRASSLEY. Thank you. We thank you all for your testimony. That is the end of this panel, and I have no questions of any of you. You might expect questions in writing if some of the other members who can't be here today have something that they want to ask or follow up on.

INTRODUCTION OF PANEL

I call the next panel, Dr. Garreth Green, Ms. Roxanne Bradshaw, Senator Fred Finlinson, Ms. Audrey McMahon, and Dr. LuAnn White.

Would you come forth and sit at the table? While you are coming, I want to suggest that if Senator Mitchell comes in, because he was scheduled to testify at 12:20, we will invite him up to this table and interrupt the present panel and ask him to testify.

Also, if there is a constituent of mine on the program, Gary Madson, who shows up, I am going to ask him to testify sometime before 1 o'clock, because I have to depart at 1 o'clock when a new chairman comes.

We are going to start with Dr. Green. He is the director of the health services and represents the American Association of University Environmental Health Sciences Centers.

Would you proceed, Dr. Green?

ENVIRONMENTAL PROTECTION AGENCY

STATEMENT OF DR. GARRETH GREEN, DIRECTOR OF ENVIRONMENTAL HEALTH SCIENCE, ASSOCIATION OF UNIVERSITY ENVIRONMENTAL HEALTH SCIENCES CENTERS

ACCOMPANIED BY DR. ROBERT RUBIN, DEPUTY DIRECTOR, ENVIRONMENTAL HEALTH SCIENCES RESEARCH CENTER, JOHNS HOPKINS SCHOOL OF HYGIENE AND PUBLIC HEALTH

RESEARCH PROGRAM OF NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES

Dr. GREEN. Thank you, Mr. Chairman. I am professor and chairman of the Department of Environmental Health Sciences at the Johns Hopkins School of Hygiene and Public Health and Director of its Environmental Health Sciences Research Center.

I wish to testify in behalf of the research program of the National Institute of Environmental Health Sciences under the authorization of the Superfund Amendments and Reauthorization Act of 1986. With me is Professor Robert Rubin, Deputy Director of the Center and author of the written testimony which we have submitted for the record in behalf of the Association of University Environmental Health Sciences Centers.

A great potential hazard has emerged in the public consciousness, that of environmental degradation and human health risk of chemical wastes spread in uncertain ways and with unknown effects through communities all across this land. The Superfund amendment authorizes some $10 billion to deal with waste disposal sites over the next 5 years with little knowledge of the true health and environmental effects of these wastes.

Most of these funds are designed to virtually dig up a site and bury it in someone else's back yard. Only 1 percent was earmarked for research into how chemicals behave when buried in waste disposal sites; how they interact; how they move through soil, air and water; how these media affect chemicals; how they can be detected when they exist in complex mixtures; and finally, what risk they exert on human health and other life forms, particularly when exposures are to very low levels of contaminant over periods of time approaching a lifetime.

We do not know how dangerous these chemical exposures really are. We do not know how to measure or even detect these exposures. We do not really know how to differentiate a truly hazardous facility from merely an obnoxious facility.

We need basic knowledge and know-how to guide the literally billions of dollars that will be expended on their management, knowledge that was to have been developed by one of the most extraordinary research initiatives in the history of extramural environmental health research funding, extraordinary because of the magnitude of the problem; extraordinary because of the source of the funding from the chemical industry; extraordinary because for the first time, health scientists, physical scientists, and engineers would be working side by side to address a major environmental health issue in the great tradition of public health and extraordinary for the outpouring of scientific effort and creative initiative demonstrated in the response of the nation's top environmental health scientists who felt that at last, there would be a concerted undertaking by the most respected national research organization.

PROPOSALS SUBJECTED TO PEER REVIEW

Thirty-seven of this country's outstanding academic institutions responded to NIEHS' phase I request for a proposal for fiscal year 1987. Of these, 29 were found to be responsive to the broad guidelines set by NIEHS for the program, and these were subjected to rigorous peer review.

Of the 29, the peer review has recommended that 25 contain research which they deemed worthy of funding. Unfortunately, the $3 million appropriation was adequate to support only the four most highly recommended applications.

In anticipation of the full funding of the second year's authorization of $10 million, NIEHS issued an RFP for what was termed phase II of the program. Some 33 institutions with a total budget request of $54 million are involved.

It has been reported that the phase II budget request of the four already approved institutions, after addition of their engineering ecology projects, amounts to $7 million alone. These requested amounts must be viewed in the light of the $5.9 million total currently being appropriated for fiscal year 1988 and projected for fiscal year 1989.

As you are aware, this initiative is in danger of being strangled to death by cutbacks that we view as ill-conceived. We urge your careful attention to a most important opportunity for enlightenment in the matter of the hazardous wastes and respectfully advise appropriation for research at or close to the levels of funding originally deemed necessary for this program in the authorizing legislation.

Thank you for your attention.

Senator GRASSLEY. Thank you very much.

[The statement follows:]

STATEMENT OF DR. GARETH M. GREEN, DIRECTOR, NIEHS-SPONSORED CENTER FOR ENVIRONMENTAL HEALTH SCIENCES

During the Congressional debate on Superfund in 1986, Congressman Wyden and Senators Hatch and and Stafford introduced amendments authorizing the National Institute of Environmental Health Sciences (NIEHS) to establish and support a University-based basic research and training program to improve this country's scientific capability to detect, assess, and evaluate the effects and risks to human health from hazardous chemicals emitted from the myriad waste disposal sites in America.

Budgetary provision in the final authorization included $3 million dollars for the first year (FY 87), $10 million for FY 88, $20 million for FY 89, $30 million for FY 90, and $35 million for FY 1991. The first year's budget was fully funded but it has now been brought to our attention that during the current year (FY 88) the Administration has cut back the authorized amount for research from $10 million to $5.9 million, with the President requesting this same level in his FY 89 budget.

Thirty seven (37) of this country's outstanding academic institutions responded to NIEHS's Phase I Request for a Proposal (RFP) for FY 87. Of these, 29 were found to be responsive to the broad guidelines set by NIEHS for the program and these were subjected to rigorous peer review. Of the 29, the peer reviewers recommended that 25 contained research which they deemed worthy of funding. Unfortunately, the $3 million dollar appropriation was adequate to support only the four most highly recommended applications. These 4 institutions have only just begun their programs within the past six months. Even in the case of these 4 awarded programs, funding of valuable portions of them was postponed to FY 88 due to the $3 million cap for the first year.

In anticipation of the full funding of the second year's authorization of $10 million dollars, NIEHS issued a RFP for what was termed Phase II of the program. Eligible for Phase II were the 4 funded projects of the initial (year plus the non-successful applicants) plus other institutions interested in applying. The most significant difference in the Phase II RFP relative to Phase I was the called for addition of projects in engineering, ecology, and hydrogeology to the biomedical projects. The purpose was to develop a broadly diversified but integrated program to deal with the whole range of environmental and health issues associated with waste disposal sites. A major objective was to get the engineering/ecology community to communicate in an efficient and productive way with the biomedical community. The deadline for the Phase II proposals was December 1, 1987. Peer review is planned to be completed by June/July 1988.

Some 33 institutions (with a total budget request of $54 million dollars) are involved. It has been reported that the Phase II budget request of the 4 already approved institutions, after addition of their engineering/ecology projects, amounts to $7 million dollars alone. These requested amounts must be viewed in the light of the $5.9 million dollar total currently being appropriated for FY 88 and projected for FY 89.

There can be little, if any, argument that the issue of human and ecological health as it relates to the impact of environmental contamination is among the top handful of issues uppermost in the minds of the American public at the present time. Witness the Love Canal, New York and Times Beach, Missouri episodes as only two of the prime examples of this issue. Hardly a day goes by without the public media turning its attention to the problem. The relationship of human health to environmental contamination ranks among the top issues in essentially every poll taken of the American public's concerns for the future. A recent debate of Presidential candidates featured this issue exclusively. And yet the withholding of funds to deal with this problem shall effectively deal a death blow to this nascent

effort to deal with a problem of immense national importance on a rational and scientific basis.

SARA authorizes some $10 billion dollars to deal with waste disposal sites over the next 5 years with little knowledge of the true health and environmental effects of these wastes. Most of these funds are designed to virtually "dig up a site and bury it in someone else's backyard". Only 1% was earmarked for research into how chemicals behave when buried in waste disposal sites, how they interact, how they move through soil, air, and water, how these media affect chemicals, how they can be detected when they exist in complex mixtures, and finally what risk they exert on human health and other life forms, particularly when exposures are to very low levels of contaminant over periods of time approaching a lifetime. It is not an exaggeration to state that the survival of a high quality life as we desire it in this country depends on answers to questions such as these. And yet only 1% (!) of the total funds authorized to deal with this problem is earmarked to find the answers to these vital questions. And now even that 1% is being threatened. This must not be allowed to happen.

The marked response of this country's academic institutions to the NIEHS RFP's and their high degree of quality as determined by peer review attest to the level of creative energy available in our country to deal with these problems. There appears to be no dearth of ideas. But the problems are complex and myriad. Appropriate funding must be made available to unleash and test new and innovative ideas in order to make significant progress.

We would like to make one additional point. We have, ourselves, responded to both the Phase I and Phase II Superfund RFP's put out by NIEHS. We would be remiss if we did not point out that to respond to these initiatives clearly requires major efforts. Virtually hundreds of hours of scientists' creative time are consumed in formulating, shaping, and presenting new

ideas, particularly in learning how to communicate among investigators in such diverse fields as hydrogeology and toxicology, for example. We welcome and are even excited about the challenge of competition among our sister institutions. However, the morale of the scientific community will be (and has already been) severely battered by a situation where there is considerable hope to make a contribution to an issue of immense national (and even international) concern and then to have "the rug whisked out from under us" and to have what appeared to be promised (authorized) funds withdrawn. Over the past 20 years, efforts by institutions, such as ours, have made significant progress in developing cadres of talented and dedicated young scientists who are prepared to devote their careers to problems in environmental health. The precipitous withdrawal of what appeared to be "promised" funds to carry out their research will do irreparable harm to their morale. If this were to happen, the role of the United States as a world's leader in the scientific and technologic aspects of environmental health would appear to be challenged. We, thereby, respectfully, urge the full reinstatement of the funds authorized for basic research by the 1986 SARA Act.

STATEMENT OF ROXANNE BRADSHAW, SECRETARY-TREASURER, NATIONAL EDUCATION ASSOCIATION

ASBESTOS SCHOOL HAZARD ABATEMENT

Senator GRASSLEY. Ms. Bradshaw is president of the National Education Association, and my understanding is that she is going to talk about the funding for the Asbestos School Hazard Abatement Act.

You may proceed.

Ms. BRADSHAW. That is correct, Senator Grassley, and thank you this afternoon for the opportunity to speak with you. I serve as secretary-treasurer of the National Education Association, and today we will specifically address the critical need for federal resources to help eradicate asbestos hazards in the nation's schools.

Despite significant efforts at the local, state, and federal level, the health hazards of asbestos exposure to children and school employees are far from being eradicated. Even now, as many as 1.4 million school employees and 15 million school children are exposed to cancer-causing asbestos every single day.

EPA's most recent estimate indicates that as many as 44,600 schools nationwide contain some 213 million square feet of friable asbestos. For the sake of the children now exposed to the cancer-causing asbestos in the schools, Congress must enact a $125 million fiscal year 1988 appropriation for the Asbestos School Hazard Abatement Act.

This position has been endorsed by the 27-member organizations of the Asbestos in the Schools Coalition. I ask that the letter which you received affirming that position be entered into the record. We are grateful for Congress' support for asbestos abatement assistance over the past 4 years, but unfortunately, for our nation's children, Congress has never appropriated the full amounts authorized under OSHA.

FEDERAL ASSISTANCE URGENTLY NEEDED

To date, Congress has provided only about 6 percent of the total $3 billion EPA estimates will be required to fully address the problem of asbestos in the schools. The decision to provide only $40 million for OSHA for fiscal year 1988, for example, was extremely shortsighted, given the health consequences for affected persons and the related health care cost.

Moreover, since the enactment of the Asbestos Hazard Emergency Response Act, the need for federal assistance is even more urgent. EPA has received grant and loan applications totaling almost $1 billion from some 7,300 schools between fiscal year 1985 and fiscal year 1987, but only 87 percent of the funds requested by local schools has been provided.

Again, in fiscal year 1988, EPA was able to fund only a fraction of the requests from schools that qualified under the needs-based criteria. In other words, some 1,084 school sites with friable and damaged asbestos-containing materials that are exposed or in air plenum did not receive assistance because of a lack of funds.

Moreover, it has been almost 2 years since EPA has conducted a full application process to give schools an opportunity to receive assistance under OSHA. Since asbestos inspections carried out under AHERA are likely to reveal hazardous asbestos, Congress should direct EPA to conduct a full round of applications so that schools have an opportunity to apply for OSHA funds.

The fiscal year 1989, OSHA appropriation is particularly critical since schools, in accordance with OHERA, must begin implementation of their management plans by July 1989. fiscal year 1989 OSHA funds would become available just as they are most needed. By providing $125 million for OSHA in fiscal year 1989, Congress would only be committed to $100 million in outlays, since $25 million of the appropriation would be repayable advances that could be made available to other schools in need of assistance.

SUPPLEMENTAL APPROPRIATION REQUESTED

Finally, NEA urges the subcommittee to approve a $25 million fiscal year 1989 supplemental appropriation to help financially hard-pressed schools comply with OHERA guidelines. Asbestos in the schools is a clear threat to our nation's young people, and it will require a sustained high level of activity until asbestos hazards are eliminated.

We urge you to fully fund OSHA for fiscal year 1989. I thank you very much for your time.

Senator GRASSLEY. Thank you, Ms. Bradshaw.

[The statement and letter follow:]

STATEMENT OF ROXANNE BRADSHAW, SECRETARY-TREASURER, NATIONAL EDUCATION ASSOCIATION

I am Roxanne Bradshaw, secretary-treasurer of the National Education Association which represents 1.9 million education employees throughout the nation in elementary, secondary, vocational, and postsecondary schools. I appreciate the opportunity to talk with you today about the critical need for federal resources to help address the problem of asbestos hazards in our nation's schools.

My message today is very simple. For the sake of the children now exposed to cancer-causing asbestos in the schools, Congress must enact a $125 million Fiscal Year 1989 appropriation for the Asbestos School Hazard Abatement Act (ASHAA). This position, as articulated in an April 5 letter to every Member of the Senate Appropriations Committee, has been endorsed by 27 member-organizations of the Asbestos in the Schools Coalition: American Association of School Administrators; American Federation of State, County, and Municipal Employees; American Federation of Teachers; American Public Health Association; California State Department of Education; Citizen Action; Council for American Private Education; Council of Chief State School Officers; Council of the Great City Schools; Environmental Defense Fund; Laborers International Union of North America; National Association of Elementary School Principals; National Association of Secondary School Principals; National Association of State Boards of Education; National Audubon Society; National Conference of State Legislatures; National Education Association; National PTA; National School Boards Association; New York City Board of Education; New York State Department of Education; Service Employees International Union; Sheet Metal Workers-International Association; U.S. Catholic Conference; U.S. Conference of Local Health Officers; U.S. Conference of Mayors; U.S. Public Interest Research Group; and the White Lung Association.

NEA has testified many times before Congress and this Subcommittee on the hazard of asbestos and the substantial need for federal assistance in eliminating this hazard in school buildings throughout the nation. Despite significant efforts at the local, state, and federal level to address the problem of asbestos in the schools, the health hazards of asbestos exposure to children and school employees are far from eradicated. Even now, as many as 1.4 million school employees and 15 million school children are exposed to cancer-causing asbestos every day. EPA's most recent estimate indicates that as many as 44,600 schools nationwide contain some 213 million square feet of friable asbestos.

We are grateful for Congress' support for asbestos abatement assistance over the past four years. Congress has shown consistent, nonpartisan support for programs, protections, and funding to eliminate the threat of cancer-causing asbestos. Indeed, the progress made in asbestos abatement would not have been possible without the guidance and assistance of the federal government. But, unfortunately for our nation's children, Congress has never appropriated the full amounts authorized under ASHAA. To date, Congress has provided approximately $190 million in grants and loans to school districts and states through ASHAA, only about 6 percent of the total $3 billion EPA estimates will be required to fully address the problem of asbestos in the schools. We recognize that Congress is faced with a number of difficult spending choices, but NEA believes that a program such as ASHAA, that has such a profound affect on the very lives of America's young people, cannot be traded away against desireable, but less essential, functions of government. The decision to provide only $40 million for ASHAA for FY88, for example, was extremely shortsighted, given the health consequences for affected persons and the related health care costs.

The President's proposed budget for FY89 calls for only $3.4 million for ASHAA, arguing that the only federal responsibility in this area is to provide some technical assistance. State and local governments have made significant efforts in recent years to contain or remove hazardous asbestos. But because many states and local communities do not have the resources to carry out the necessary abatement projects, federal assistance is required.

Moreover, since the enactment of the Asbestos Hazard Emergency Response Act (AHERA), P.L. 99-519, in 1986, mandating that all schools complete asbestos inspection and management plans by October 1988 and begin abatement by July 1989, the need for federal assistance is even more urgent.

One indication of the need for federal assistance under ASHAA is the fact that EPA received grant and loan applications totalling almost $1 billion from some 7,300 schools between FY85-FY87, that is before the enactment of AHERA. Only 1,244 of the applicants received assistance under the program, and no new applications were allowed for FY88. To date, only 17 percent of the funds requested by local schools has been provided.

In March 1988, EPA provided schools $22.6 million in financial assistance — about one-third in grants and two-thirds in loans — under the ASHAA program. The awards were selected from 1987 applications which were considered eligible, but not funded, in FY87. The amounts received for selected states under these FY88 awards were: Louisiana, almost $1.2 million; Mississippi, $1.046 million; Wisconsin, $900,000; New Jersey, $685,000; New York, $602,000; Iowa, $368,000; Maryland, $80,000; and Vermont, $16,000. These funds will be used to carry out 45 abatement projects in the states listed. Nationwide, FY88 ASHAA funds will help carry out some 226 projects in 27 states. However, FY88 funding for ASHAA was sufficient to fund only those 226 of the 1,310 projects qualified under the needs-based criteria. In other words, some 1,084 school sites with friable and damaged asbestos-containing materials that are exposed or in an air plenum did not receive assistance because of a lack of funds.

Moreover, it has been almost two years since EPA has conducted a full application process to give schools an opportunity to receive assistance under ASHAA. Since asbestos inspections carried out under the requirements of AHERA are likely to reveal hazardous and potentially hazardous asbestos in schools, Congress should direct EPA to conduct a full round of applications so that schools which need assistance have an opportunity to apply for ASHAA funds.

It is vital that this Subcommittee support and that Congress enact an FY89 appropriation for ASHAA that fully funds the $125 million authorized for the program. Of this amount, $25 million would be repayable advances for the Asbestos Trust Fund established by AHERA. As ASHAA loans are repaid by schools, money placed in this Trust Fund is then made available to other schools in need of assistance. Thus, providing the fully authorized amount for ASHAA would result in only $100 million in new outlays.

The need for federal assistance to undertake asbestos abatement continues to far outweigh available funds. Local school agencies applying for ASHAA grants and loans are those with the greatest financial needs, and awards are provided only to those schools with the most severe asbestos hazards.

There have been problems in the past with the timing of the award application process. We urge Congress to direct EPA to distribute applications to local education agencies no later than December 1, 1988, and to announce awards to schools no later than April 15, 1989, so that schools can conduct abatement work in the summer months while students and education employees are not present in the building. The FY89 ASHAA appropriations is particularly critical. Since schools, in accordance with AHERA, must begin implementation of their management plans by July 1989, FY89 ASHAA funds would become available just as they are most needed.

Finally, NEA urges this Subcommittee to approve a $25 million FY88 supplemental appropriation to help financially hard-pressed schools comply with AHERA guidelines. Of this supplemental appropriations, $15 million should be targeted for the Asbestos Inspection and Management Plan Assistance Program (AIMPAP) which provides funds to states to help local schools carry out asbestos inspections and management plans, and the remaining $10 million should be used by EPA to increase the number of approved training courses for inspectors and management plan developers, increase the number of accredited labs, and increase the number of EPA regional staff assigned to assist schools.

Preserving the health and safety of America's children and youth must be a key priority for all levels of government. It is not enough for Congress to enact legislation setting up a procedure for prompt and careful elimination of asbestos hazards in the schools. Congress must provide the resources to ensure the health of students attending schools with the most severe health hazards and least financial capacity for addressing those hazards.

Asbestos in the schools is a clear threat to our nation's young people, and it will require a sustained high level of activity until asbestos hazards are eliminated. The health and safety of hundreds of thousands of students and school employees depends on your action. We urge you to fully fund ASHAA for FY89.

Thank you.

ASBESTOS SCHOOL HAZARD ABATEMENT ACT

AWARD HISTORY

APPLICATIONS	LEAS	SCHOOL	ALL PROJECTS	DOLLARS	PRIORITY VALUE I PROJECTS
1985	1107	5095	8548	$536,000,000	1104
1986	371	1211	2389	212,000,000	1133
1987 *	340	1015	1769	178,000,000	693
1988	-- NO NEW APPLICATIONS ACCEPTED --				
TOTAL	1818	7321	12,706	926,000,000	2930
AWARDS					
1985	198	340	417	45,000,000	324
1986	173	295	421	47,000,000	391
1987 * (Round I)	133	366	663	34,200,000	280
1987 (Round II)	35	56	66	8,000,000	53
1988 **	103	187	226	22,600,000	226
TOTAL	642	1244	1793	156,800,000	1274
PERCENT AWARDS/ APPLICATIONS	35%	17%	14%	17%	43%

* 1987 Round I awards were made to leftover unfunded 1986 applications. A scaled down application process was used for 1987 Round II awards.

** 1988 awards were made to leftover unfunded 1987 Round II applications. No new applications were accepted.

5/28
NEA/GR

Letter From the Asbestos in the Schools Coalition

April 5, 1988

The Honorable John C. Stennis
Chairman
Senate Committee on Appropriations
U. S. Senate
Washington, D.C. 20510

Dear Senator Stennis:

The Asbestos-in-Schools Coalition, representing parents, children, teachers and other school employees, school boards and school administrators, and other concerned organizations, strongly urges you to provide $125 million in FY 89 funds for the Asbestos School Hazard Abatement Act (ASHAA). In addition, we support a $25 million FY88 supplemental appropriation for ASHAA.

The need for increased ASHAA funding is more urgent than ever. All elementary and secondary schools in the nation are required by the Asbestos Hazard Emergency Response Act (AHERA), P.L. 99-519, to complete an asbestos inspection and develop asbestos management plans by October 1988, and to begin implementation of the plans by July 1989. EPA has estimated it will cost schools over $3.1 billion to comply with AHERA.

On a bipartisan basis for the last four years, Congress has demonstrated its strong support of a federal role to assist local schools in removing the health threat which asbestos presents to 15 million school children and 1.5 million school employees. However, the funding made available to schools has been woefully inadequate.

EPA has received requests from 7,321 schools for ASHAA funds totaling $928 million from FY85-FY87 (no new applications were allowed for FY88). Yet only 1,244 schools received a total of $156.8 million. This provided a paltry 17 percent of funds requested. And all these requests came before schools were mandated to carry out abatement actions by AHERA.

To help financially hard-pressed schools we urge you to provide a $25 million FY88 ASHAA supplemental. Of this amount, $15 million should be targeted for the Asbestos Inspection and Management Plan Assistance Program (AIMPAP) which provides funds to states to help local schools carry out the inspections and development of management plans required by AHERA. The remaining $10 million should be targeted for use by EPA to increase the number of approved training courses for inspectors and management plan developers, increase the number of accredited labs, and increase the number of EPA regional staff assigned to assist schools.

In addition, full funding of ASHAA at $125 million is desperately needed as schools start the actual abatment work required of them in July 1989. Almost two-thirds of ASHAA awards are in the form of repayable loans.

We once again urge you to provide the resources that local schools need to ensure that the health of our nation's school children is no longer threatened by asbestos hazards.

Sincerely,

American Association of School Administrators
American Federation of State, County, and Municipal Employees
American Federation of Teachers
American Public Health Association
California State Department of Education
Citizen Action
Council for American Private Education
Council of Chief State School Officers
Council of the Great City Schools
Environmental Defense Fund
Laborers International Union of North America
National Association of Elementary School Principals
National Association of Secondary School Principals
National Association of State Boards of Education
National Audubon Society
National Conference of State Legislatures
National Education Association
National PTA
National School Boards Association
New York City Board of Education
New York State Department of Education
Service Employees International Union
Sheet Metal Workers, International Association
U.S. Catholic Conference
U.S. Conference of Local Health Officers
U.S. Conference of Mayors
U.S. Public Interest Research Group
White Lung Association

STATEMENT OF HON. GEORGE MITCHELL, U.S. SENATOR FROM MAINE

CLEAN WATER ACT

Senator GRASSLEY. As I indicated to the panel, we would interrupt the panel when Senator Mitchell, the distinguished Senator from the State of Maine, came for his testimony, and so we will now turn to you at this point, Senator Mitchell.

Senator MITCHELL. Thank you very much, Mr. Chairman. I appreciate it, and I am grateful to the witnesses for permitting me to proceed out of order.

Mr. Chairman, for almost 20 years, the Clean Water Act has done a remarkable job of cleaning up our rivers, lakes, and streams. The heart of the Clean Water Act has been an aggressive program to help communities build sewage treatment plants.

I am here today to urge you to provide the funding which is essential to the continued success of our clean water program.

I ask unanimous consent, Mr. Chairman, that my full statement, the statements of Senators Chafee and Moynihan, and some attachments to my statement be included in the record in full.

Senator GRASSLEY. Those statements and the accompanying material will be printed at the appropriate place.

[The statements follow:]

STATEMENT OF SENATOR GEORGE J. MITCHELL

For almost twenty years, the Clean Water Act has done a remarkable job of cleaning up our rivers, lakes and streams. The heart of the Clean Water Act has been an aggressive program to help communities build sewage treatment plants.

I am here today to urge you to provide the funding which is essential to the continued success of our clean water programs.

When Congress reauthorized the Clean Water Act last year, we made a commitment to the American people to continue assisting communities in building sewage treatment plants. Under Senator Chafee's leadership, we developed a total package authorizing $18 billion over nine years.

Unfortunately, the President has proposed to cut FY 1989 funding for sewage treatment from the $2.4 billion authorized in the CleanWater Act amendments to $1.5 billion. This cut, or any significant reduction below the authorization level, would be a major blow to communities ready to build treatment plants and to States developing revolving loan funds.

In my home State of Maine, the President's proposal would reduce funding from about $18 million to about $12 million and undermine progress by Maine communities toward clean water

The package provided for the gradual phase out of the traditional grant program and the creation of new, State-managed revolving loan funds. These State loan funds are to provide a permanent source of financial support for water quality projects.

This overall package is the absolute minimum needed for the Federal share of the costs of sewage treatment. It is an essential first step toward meeting sewage treatment plant construction needs estimated by the EPA at over $76 billion.

Last year, we carried through on our commitment to assure adequate funding for this program by appropriating just over $2.3 billion out of the total annual authorization of $2.4 billion. We must do at least as well this coming year.

Unfortunately, the President has proposed ~~wants~~ to cut FY 1989 funding for sewage treatment from the $2.4 billion authorized in the Clean Water Act amendments to $1.5 billion. This cut, or any significant reduction below the authorization level, would be a major blow to communities ready to build treatment plants and to States developing revolving loan funds.

In my home State of Maine, the President's proposal would reduce funding from about $18 million to about $12 million and undermine progress by Maine communities toward clean water goals. The President's proposal would cost Wisconsin about $24 million and would cost Iowa about $25 million.

I have a chart indicating the effect of the President's proposal on funding levels in each State and ask that it be included in the record.

Mr. Chairman, the Congress has defeated this plan once already. Following the President's veto of the clean water bill, we considered a substitute bill developed by the Administration providing total funding of $12 billion and including $1.9 billion for FY 1989. The Senate defeated the substitute by a wide margin and went on to pass the original bill almost unanimously.

In that debate, I reminded my colleagues that the funding package authorized in the bill was part of an agreement reached with the Administration in 1981. At that time, the Administration wanted to reduce annual funding from about $5 billion to $2.4 billion, to cut the Federal share of grants from 75% to 55%, and to narrow project eligibilities.

Congress went along with these changes in exchange for a commitment to maintain the funding at $2.4 billion for at least 10 years. Now, having already taken the cuts to the program, the Administration wants to break its commitment to maintain the funding. We rejected that plan last year, and I hope that the members of the Committee will reject it again this year.

Full funding of the program is even more important this year than last year for several reasons. First, this is the first year in which the appropriation is split between the existing Federal grant program and the new State revolving loan fund program. Providing adequate capital for these State loan funds is critical if they are to effectively replace the grant program.

Second, communities all across the country are facing the July 1, 1988 deadline for compliance with the secondary treatment requirments of the Clean Water Act. Following through on our commitment to provide Federal financial assistance in support of this effort is essential to meeting this goal.

Mr. Chairman, my colleagues on the Environment Committee are determined to do whatever we can to make the case for continued funding of the construction grants program. As part of this effort, the Subcommittee on Environmental Protection, which I chair, will meet tomorrow to mark-up S. Res. 389, calling for full funding of the program.

I have a copy of the Resolution, introduced by Senator Lautenberg and sponsored by over thirty other Senators, and ask that it be included in the record.

I do not want to close without noting that the President's budget ignores or underfunds several other important EPA efforts including grants to States for control of nonpoint sources of water pollution, support for the Clean Lakes Program, clean-up of leaking underground storage tanks, and programs for attainment of clean air standards.

I recognize that you must make difficult choices within the constraints of the budget process. I am confident, however, that the great majority of the American people join me in urging you to provide full funding of the construction grants program which is so vital to protecting our rivers, lakes and coastal waters.

Thank you.

State Allotments at $2.4 billion and $1.5 billion

February 29, 1988

STATE	$2.4 BILLION	$1.5 BILLION	DIFFERENCE $2.4B v. $1.5B
Alabama	$26,870,000	$16,794,000	$10,076,000
Alaska	$14,382,000	$8,989,000	$5,393,000
Arizona	$16,230,000	$10,144,000	$6,086,000
Arkansas	$15,719,000	$9,825,000	$5,894,000
California	$171,863,000	$107,415,000	$64,448,000
Colorado	$19,222,000	$12,013,000	$7,209,000
Connecticut	$29,439,000	$18,399,000	$11,040,000
Delaware	$11,797,000	$7,373,000	$4,424,000
Dist. of Columbia	$11,797,000	$7,373,000	$4,424,000
Florida	$81,114,000	$50,696,000	$30,418,000
Georgia	$40,629,000	$25,393,000	$15,236,000
Hawaii	$18,612,000	$11,632,000	$6,980,000
Idaho	$11,797,000	$7,373,000	$4,424,000
Illinois	$108,680,000	$67,926,000	$40,754,000
Indiana	$57,913,000	$36,195,000	$21,718,000
Iowa	$32,523,000	$20,327,000	$12,196,000
Kansas	$21,691,000	$13,557,000	$8,134,000
Kentucky	$30,583,000	$19,115,000	$11,468,000
Louisiana	$26,417,000	$16,510,000	$9,907,000
Maine	$18,602,000	$11,626,000	$6,976,000
Maryland	$58,119,000	$36,325,000	$21,794,000
Massachusetts	$81,587,000	$50,991,000	$30,596,000
Michigan	$103,325,000	$64,578,000	$38,747,000
Minnesota	$44,168,000	$27,605,000	$16,563,000
Mississippi	$21,650,000	$13,531,000	$8,119,000
Missouri	$66,615,000	$41,635,000	$24,980,000
Montana	$11,797,000	$7,373,000	$4,424,000
Nebraska	$12,291,000	$7,682,000	$4,609,000
Nevada	$11,797,000	$7,373,000	$4,424,000
New Hampshire	$24,014,000	$15,009,000	$9,005,000
New Jersey	$98,198,000	$61,374,000	$36,824,000
New Mexico	$11,797,000	$7,373,000	$4,424,000
New York	$265,237,000	$165,774,000	$99,463,000
North Carolina	$43,370,000	$27,106,000	$16,264,000
North Dakota	$11,797,000	$7,373,000	$4,424,000
Ohio	$135,280,000	$84,550,000	$50,730,000
Oklahoma	$19,414,000	$12,134,000	$7,280,000
Oregon	$27,146,000	$16,966,000	$10,180,000
Pennsylvania	$95,187,000	$59,492,000	$35,695,000
Rhode Island	$16,135,000	$10,084,000	$6,051,000
South Carolina	$24,618,000	$15,386,000	$9,232,000
South Dakota	$11,797,000	$7,373,000	$4,424,000
Tennessee	$34,908,000	$21,818,000	$13,090,000
Texas	$109,833,000	$68,645,000	$41,188,000
Utah	$12,662,000	$7,914,000	$4,748,000
Vermont	$11,797,000	$7,373,000	$4,424,000
Virginia	$49,179,000	$30,736,000	$18,443,000
Washington	$41,789,000	$26,118,000	$15,671,000
West Virginia	$37,460,000	$23,413,000	$14,047,000
Wisconsin	$64,964,000	$40,603,000	$24,361,000
Wyoming	$11,797,000	$7,373,000	$4,424,000
American Samoa	$2,158,000	$1,348,000	$810,000
Guam	$1,561,000	$976,000	$585,000
Northern Marianas	$1,002,000	$627,000	$375,000
Puerto Rico	$31,342,000	$19,589,000	$11,753,000
Pacific Trust Terr.	$3,077,000	$1,923,000	$1,154,000
Virgin Islands	$1,252,000	$782,000	$470,000
TOTAL	$2,376,000,000	$1,485,000,000	$891,000,000
MARINE ESTUARY RESERVE	$18,000,000	$11,250,000	$6,750,000
INDIAN TRIBES	$6,000,000	$3,750,000	$2,250,000
	$2,400,000,000	$1,500,000,000	$900,000,000

100TH CONGRESS
2D SESSION

S. RES. 389

To express the sense of the Senate regarding future funding of the Construction Grants Program of the Clean Water Act.

IN THE SENATE OF THE UNITED STATES

MARCH 1, 1988

Mr. LAUTENBERG (for himself, Mr. MITCHELL, Mr. CHAFEE, Mr. BURDICK, Mr. STAFFORD, Mr. MOYNIHAN, Mr. GRAHAM, Ms. MIKULSKI, Mr. BAUCUS, Mr. WILSON, Mr. SIMON, Mr. GORE, Mr. HARKIN, Mr. REID, Mr. FORD, Mr. SARBANES, Mr. LEAHY, Mr. BRADLEY, Mr. D'AMATO, Mr. CRANSTON, Mr. INOUYE, Mr. HUMPHREY, Mr. LEVIN, Mr. PELL, Mr. RIEGLE, Mr. DODD, Mr. WEICKER, Mr. DASCHLE, and Mr. KENNEDY) submitted the following resolution; which was referred to the Committee on Environment and Public Works

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RESOLUTION

To express the sense of the Senate regarding future funding of the Construction Grants Program of the Clean Water Act.

Whereas clean water is a vital resource deserving the most rigorous protection;

Whereas a key component in protecting the Nation's oceans, rivers, lakes, and other waterways is Federal funding for the construction of sewage treatment plants as set forth in the Construction Grants Program of the Clean Water Act;

Whereas the unmet national need for sewage treatment construction has been estimated to be $76,000,000,000;

Whereas Congress, in enacting the Water Quality Act of 1987, authorized $2,400,000,000 for the Construction Grants Program in 1989;

Whereas the amount authorized by Congress is a just and prudent downpayment on a large national need;

Whereas the President's 1989 budget unjustifiably would reduce the $2,400,000,000 that is authorized for the Construction Grants Program by $900,000,000 in budget authority;

Whereas the One Hundredth Congress, by overriding the President's veto of the Water Quality Act of 1987, rejected the President's earlier attempt to amend and further reduce the Construction Grants Program;

Whereas the President's rationale in the budget message of privatizing the Construction Grants Program ignores the large national needs for sewage treatment as well as the congressionally mandated plan for assisting with those needs through both construction grants and through a transition to State revolving loan funds;

Whereas the State revolving fund approach that is set forth in the Water Quality Act of 1987 will assure an orderly and appropriate transition from the Construction Grants Program;

Whereas tampering with the approach to construction grants funding, which was enacted by Congress with the support of the American people and through an override of the President's unwise veto, would have a disruptive and negative effect on implementation of the law: Now, therefore, be it

Resolved, That it is the sense of the United States Senate that the President's 1989 budget proposals for the Construction Grants Program be soundly rejected, and that Congress through the budget and appropriations process assure the appropriation of the amount authorized for the program by the Water Quality Act of 1987, and further assure that such funds are spent in compliance with the spirit and the letter of the law.

SEC. 2. The Clerk of the United States Senate shall transmit a copy of this resolution to the President with the request that the President further tranmit a copy to the Administrator of the United States Environmental Protection Agency.

STATEMENT OF SENATOR JOHN H. CHAFEE

Mr. Chairman. The Administration's proposal to fund the Clean Water Act's construction grants and State revolving loan program at $1.5 billion, $800 million less than last year and $900 million less than the $2.4 billion agreed to as part of the 1987 Clean Water Act Amendments, is a mistake and should be rejected by this committee.

This proposal is little more than an attempt to accomplish, through the budget process, an agenda that was soundly defeated when we voted to override the President's veto of the Clean Water Act amendments last year.

It will leave a large environmental need unsatisfied. Our cities and towns simply cannot afford to bear the full cost of building wastewater treatment plants. Under the 1987 amendments to the Clean Water Act, Rhode Island is scheduled to get over $16 million in 1989 to help pay for sewage treatment. Under the President's proposal, we would lose more than $6 million. In addition, the program we set up to clean up our nation's bays and estuaries would lose almost $7 million.

These reductions are not only unwise but they are unnecessary. The budget agreement reached last year to reduce the deficit and the budget resolution we recently adopted did not call for a reduction in this program. We can appropriate the full $2.4 billion and still meet the deficit reduction targets.

So where does this lost $900 million go? Does it go to other EPA programs? No, it does not! Even though the proposal would cut $900 million here, it would increase EPA's operating budget by only $48 million.

We all know that EPA is overburdened. It has too many responsibilities and too few resources. But rather than continuing to protect the environment with this money, the Administration proposes to shift this money to some other area. The proposal is wrong and must be rejected by the Congress. I urge this committee to approve full funding of the construction grants and State revolving loan program at $2.4 billion for fiscal year 1989.

In addition to shortchanging this important program, the budget that is before us would ignore a number of other important programs that were approved by Congress as part of the Clean Water Act amendments of 1987. For example, there is no money requested for the new program to control nonpoint sources of pollution. Failure to fund this program is a prime example of being penny wise and pound foolish.

Similarly, there is no money requested for the clean lakes program. Last year, this committee, the full Senate and the full House all approved funding for the clean lakes program. Then, at the last minute, the conference committee shifted position and, without even mentioning it, eliminated the funding for this important program.

To fulfill the promise of the Clean Water Act amendments of 1987 and to give communities all across the country an opportunity to apply for grants to help clean up our lakes, water bodies such as Lake Washington and Gorton's Pond in Rhode Island, I urge you to report a bill that includes funds for the clean lakes program.

Three final points, Mr. Chairman. First, during consideration of the EPA appropriations bill last year, the Senate adopted an amendment that I offered to appropriate funds for the feasibility study and design of a sewer demonstration project in Cranston, Rhode Island. Unfortunately, that provision did not survive the conference with the House.

In putting together this year's bill, I encourage the committee to review that proposal and include, if not the full amount, at least a portion of the funds that we approved last year for Cranston. The value and importance of this project, in terms of demonstrating a potential solution to the national problem of contaminated runoff and groundwater from landfills, is considerable and the initial phase of this project is still in need of funding.

Second, Mr. Chairman, I know that you and your staff have been examining the important issue of funding for EPA's stratospheric ozone depletion and global climate change programs. These are two of the most important problems being addressed by the Agency today and, since I have spent a considerable amount of time on them in the last few years, I would like to offer any support and assistance you may need as you get into these complex, extremely important issues.

Finally, as always, this committee will be asked by some of our colleagues to include provisions that include substantive amendments to authorizing legislation, such as the Clean Water Act. These requests should be denied. Inclusion of legislative amendments will undoubtedly be opposed on the floor and will complicate an already difficult process.

I thank the Chairman and all of the Members of this Committee for their time and consideration of my testimony. I look forward to working with you as we wrestle with the tough decisions that must be made as part of the appropriations process.

STATEMENT OF SENATOR DANIEL PATRICK MOYNIHAN

Mr. Chairman, there are several important issues to be addressed at this hearing that will determine the success of the Clean Water Act. These are programs of the utmost importance to state governments. The issues are adequate funding for construction grant programs in the form of cash payments to individual states, funding for non-point source pollution, Clean Lakes, and well-head protection.

Adequacy of Construction Grant Funding

The Clean Water Act originated in our Committee on Environment and Public Works. While much attention has been paid to the fact that the clean water program is being continued, too little attention has been focused on how the 1987 amendments terminated the construction grant program.

At the start of last year, the Congress made its intentions clear regarding the funding for the Clean Water Act. We chose to authorize the program at $18 billion over the next 8 years, not the $12 billion suggested by the Administration. Congress decisively overrode the president's veto of the bill to pass this important legislation. Now the Administration is once again trying to undermine the program by requesting only $1.5 billion for FY89, instead of the $2.4 billion authorized.

Even with full funding, the States are hard pressed to meet their needs. With full funding, New York will receive almost $1.1 billion over the next 8 years of the bill, but in the next 10 years New York's needs are projected to be close to $6 billion to be in compliance with EPA's requirements. Already, many communities across the country have been notified by their State's Attorney General that they will not meet the July 1, 1988 deadline for secondary treatment. Other States face similar shortfalls.

Phase Out of Federal Funding

The last phase of the $18 billion construction grant program, outlined in Section 601(b) of the Clean Water Act, establishes State Revolving Funds into which are deposited payments from the Administrator of EPA and each State's matching funds. The grant program will continue for 4 years, after which the State Revolving Funds will be established with contributions from the federal and state government account for 80 percent and 20 percent of the monies, respectively. From this fund the States will make loans to local authorities to build or improve sewage treatment facilities. The SRFs will be replenished as the loans are repaid, and construction/improvement will continue indefinitely, or so we hope. The intent of such a program is to provide initial funds that can be leveraged over time by the States to sustain their clean water construction programs.

Congress has already taken major steps to reduce this program's impact on the deficit. In 1981, Congress reduced funding for the program from $5 billion dollars a year to $2.4 billion a year. In fiscal year 1985 Congress reduced the Federal share from 75 percent to 55 percent. Eligibility restrictions were tightened. Auditing procedures were strengthened. Finally, with the Water Quality Act of 1987, a plan was initiated to phase out the Federal Construction Grants Program by 1994.

State Losses With Letters of Credit

The Office of Management and Budget, ignoring the intent of Congress, announced last year that it would not have the Treasury deposit cash into the revolving funds as we anticipated. Instead, the OMB indicated that the Federal Government would give letters of credit to the States. The issuance of letters of credit will cost at least $2 billion in lost interest earnings for the States, would increase carrying costs, and jeopardize state bond ratings.

In the longer term this policy will cost states billions of dollars in real purchasing power for building sewage treatment plants over the next 10 to 20 years as the States attempt to convert from a federal grant program to State revolving funds. New York State, alone, will lose more than $1.3 billion to build and upgrade sewage treatment plants over the next 20 years.

This shortsighted policy is a clear betrayal of the commitment we made to a Federal-State partnership to clean up our nation's waters. Without initial cash payments into SRF's, they will not be self-sustaining and the States will be unable to afford long-term improvements.

Mr. Chairman, it is irresponsible for Congress to turn this program over to the States without providing for an orderly transition and adequate capital. Our cities, towns and villages are already struggling to meet the July 1, 1988 water quality deadlines. I am sure that members have heard from many of their constitutents that EPA is moving ahead with fines and consent decrees. We need to provide States with the start they need to achieve compliance and to sustain these programs over the long term.

I implore the Committee to restate the original intent of the Clean Water Statute, and include appropriate language in the 1989 appropriations bill for EPA to reestablish cash payments to States for construction grants under Clean Water authority.

Non-point Source Pollution and Clean Lakes Program

The Clean Water Act of 1987 addresses several major sources of water pollution other than sewage, such as the Non-point Source Pollution and Clean Lakes Programs. The Clean Water Act established a program to coordinate, for the first time, federal and state efforts to control non-point source pollution. The law authorized $400 million over 4 years to address non-point source pollution, including $70 million for fiscal 1988 and $100 million for 1989. But Congress has failed to appropriate funds for this vitally important program so far. Soon, more than half of the states nationwide will submit non-point source management plans to EPA as required under the Act. It is only right that the Federal Government should meet its responsibility to provide funds adequate to implement these programs.

Two of the more significant contributors to the water pollution are from non-point sources; agricultural and municipal runoff. EPA information suggests that 76 percent of the pollutant loading our lakes, 65 percent in our rivers and streams and 45 percent in our coastal bays and estuaries originate from non-point sources. Pesticides and fertilizers washed out of farm fields into local streams and rivers, and toxic concentrations of petroleum produces and road salts have been shown to affect aquatic flora and fauna, as well as to degrade our surface water drinking supplies. Not a single State escapes the threat of agricultural runoff of pesticides and fertilizers into their local waters. Funding is necessary to determine how these materials can be used effectively without a detrimental effect on our valuable water resources and without the threat to human health.

Many of our nation's lakes are plagued by siltation and acidification. The Clean Lakes Program is designed to provide $85 million to States to clean their lakes so that once again, they can be enjoyed for their recreational and aesthetic values.

Wellhead Protection Program

Turning our attention to groundwater protection-- the 1986 amendments to the Safe Drinking Water Act required States to establish areas around public drinking water wells to prevent migration of pollutants from the ground surface to the groundwater drinking supplies. States are to decide the extent of the wellhead protection areas and how to protect them. States are to submit a wellhead protection plan within three years. Once again, however, the Federal Government has not provided the necessary financial assistance to the States for development of this important management strategy.

Although this amendment has been recognized as one of the more effective measures necessary to protect our groundwater drinking supplies, the Program has not received any appropriations to date. The Federal Government cannot continue to renege on its responsibility by failing to pay its share. I urge this Subcommittee to restore full and necessary funding so that the intent of Congress can be realized and our nation's resources can be restored and protected for the future.

COMMUNITY-BUILT SEWAGE TREATMENT PLANTS

Senator MITCHELL. Mr. Chairman, when Congress reauthorized the Clean Water Act last year, we made a commitment to the American people to continue assisting communities in building sewage treatment plants. Under Senator Chafee's outstanding leadership, we developed a total package authorizing $18 billion over 9 years.

The package provided for the gradual phaseout of the traditional grant program and the creation of the new state-managed revolving loan fund program. These state loan funds are to provide a permanent source of financial support for water quality projects. This overall package is the absolute minimum needed for the federal share of the costs of sewage treatment.

It is an essential first step toward meeting sewage treatment plant construction needs, now estimated by the EPA at over $76 billion. Unfortunately, the President has proposed to cut the fiscal year 1989 funding for sewage treatment from the $2.4 billion authorized in the Clean Water Act Amendments down to $1.5 billion.

This cut or any significant reduction below the authorization level would be a major blow to communities ready to build treatment plants and to states developing revolving loan funds.

It would reduce the authorization in Maine by $6 million; in Wisconsin, by $24 million; in Iowa, by $25 million. In one of my attachments, Mr. Chairman, there is a chart showing the effect on every state.

Now, Mr. Chairman, this Congress has defeated this plan once before. Last year, following the President's veto of the clean water bill, we considered a substitute bill provided by the administration which would have provided total funding of $12 billion, including $1.9 billion for fiscal year 1989.

The Senate defeated the substitute by a wide margin and went on to pass the original bill almost unanimously. In that debate, I reminded my colleagues, and I want to remind the members of this subcommittee again today, that the funding package in the bill that we passed was part of an agreement reached with the administration in 1981 and reaffirmed in 1984.

In 1981, the authorized level of funding for this program was $5 billion a year. The previous year's appropriation had been $4.5 billion a year.

THREE PRESIDENTIAL REQUESTS

When the President took office, he asked the Congress to do three things: He asked the Congress to reduce the level of funding from $5 billion to $2.4 billion. Second, he asked that the federal share of grants be reduced from 75 percent of the total project cost to 55 percent. And third, he asked that certain types of projects which were previously eligible for federal assistance be declared ineligible so as to narrow the scope of project eligibility.

Congress, our committee, agreed to all of the President's requests. In exchange for that, we asked the administration for its commitment to support funding at the reduced level of $2.4 billion for 10 years, and the administration agreed in a publicly stated agreement.

In 1984, the Director of the EPA, Mr. Ruckleshouse, testified before our committee, and he again reaffirmed the agreement, and I now quote directly from Mr. Ruckleshouse's testimony.

He said, "There is an agreement with the administration and with the Congress that for 10 years, this level of funding is a commitment." That was the administration's position.

We made a deal. We made an agreement, and now, the administration, having gotten the changes in the program that it wants, has come back and said, "Now we want to undo the part of the deal that we agreed to."

So, Mr. Chairman, I hope very much that this committee will again do what the Congress did last year, and that is reject that and say, "This is the minimum level essential to this program."

I want to say that I mentioned Senator Chafee. He did a terrific job. Really, this is an example of ending a large federal program. The administration could well have declared victory here, because we have taken a wholly federal program, and we are now changing it into to a wholly state program.

Once this 9-year period is over, the state revolving funds will have been established. There will be no more federal program. This could have been claimed by the administration as a great victory. Instead, they have come back with this proposal which I believe ought to be rejected.

Mr. Chairman, I apologize for going beyond my time limit. I do appreciate your taking me in, and I will leave the material that I provided here.

Senator GRASSLEY. Thank you very much, Senator Mitchell. I don't have any questions at this point, but we do appreciate your testimony. I also took note of the $25 million that my state will lose under the present proposal.

Senator MITCHELL. Mr. Chairman, I know you are very keenly interested in this, because I recall very clearly the high level of interest and participation which both you and Senator Harkin demonstrated on the Des Moines problem just a couple of years ago, so I know you are familiar with this and how important it is to your largest community.

Senator GRASSLEY. Thank you.

STATEMENT OF FRED FINLINSON, STATE SENATOR, UTAH, NATIONAL CONFERENCE OF STATE LEGISLATURES

Senator GRASSLEY. We are now going to hear from State Senator Fred Finlinson from the state of Utah, right?

Mr. FINLINSON. That is correct.

Senator GRASSLEY. It is my pleasure to welcome you to this hearing and ask you to proceed.

Mr. FINLINSON. Thank you, Mr. Chairman. I wish to testify today about the fiscal year 1989 budget for the Clean Water Act. My name is Fred W. Finlinson, and I am a member of the Utah State Senate. But I also serve as vice chair of the environmental committee of the National Conference of State Legislatures on whose behalf I am testifying.

I understand that the committee already has a copy of the written statement which I prepared which will be a part of the record.

Senator GRASSLEY. Yes; it will.

SEWAGE TREATMENT CONSTRUCTION GRANTS AND LOANS

Mr. FINLINSON. So I will focus my time on the key points and the state's position regarding the proposed decreases in and the limitations on funding for sewage treatment construction grants and loans.

The National Conference of State Legislatures is concerned about this extremely vital program which funds the sewage treatment construction that is being reduced from levels that have already been severely underfunded.

Senator Mitchell has underscored that agreement. The facts that we are faced with is a reduced federal funding level and increased capital costs. That is the battle that is facing the states and local governments.

With these facts in mind, the policymakers move to a transition program to move from the fully funded federal program to one that was managed financially and conceptually by the states.

TRANSITION TO STATE REVOLVING FUNDS

This was the creation of our state revolving funds. As a representative of the state, NCSL actively supports the concept of the state revolving funds. Our concern arises over the funding levels from Congress and how that transition is going to be implemented.

Full funding is really critical this year, because we are now starting in the funding for the startup of the state revolving funds. Without the full funding, the efficient start-up of these state revolving funds will be delayed.

Another state concern is how the construction grant and loan programs will be transmitted. Prior to 1987, construction grants were always paid in cash. However, beginning with the fiscal year 1988 funds, the Environmental Protection Agency has declared its intention to issue letters of credit instead of cash payment to the states.

Once again, it is particularly critical for a strong and immediate start-up of the state revolving fund so that full cash payments be made to the states.

We state this for four reasons. First of all, the Clean Water Act, I think, directs that the state matching funds be in cash, and it further requires the state matching funds to be in the same form as the federal payments.

Second, the federal tax statutes prohibit federal guarantees on tax exempt bonds. Since the letter of credit raises some tax questions, its feasibility as a financing mechanism may be really questionably.

In my home state, since 1983, we have been operating our own wastewater loan program. To date, we have been able to fund 28 projects and nearly $100 million in project cash. So we know how effective that state revolving fund program really is.

We feel that the problems in the mechanics can be worked out. We are willing to work very closely with the EPA to come up with a program that will be effective for all the states. There are some programs and problems of restrictions in the EPA guidance documents that may create some problems for states like Colorado and Arizona that have restrictions in their constitutions about issuing general obligation bonds.

We really wanted to bring that to your attention, because that creates some uniqueness and some difficulty with that guidance for those states, especially in the western part of the United States.

We feel that working together that we can accomplish the goals of the Clean Water Act. We really do need the full funding, and we urge that we work better to solve these problems dealing with the letters of credit. Thank you very much for your time.

Senator GRASSLEY. Thank you very much for your testimony.

[The statement follows:]

STATEMENT OF STATE SENATOR FRED W. FINLINSON OF UTAH

Mr. Chairman and Members of the Committee, I wish to testify today in regard to the FY 1989 Budget. My name is Fred W. Finlinson, and I am a member of the Utah State Senate. I also serve as Vice Chair of the Environment Committee of the National Conference of State Legislatures on whose behalf I am testifying.

Today I would like to bring to your attention concerns that many states have regarding proposed decreases in and limitations on funding for sewage treatment construction grants and loans.

The National Conference of State Legislatures (NCSL) is concerned that the extremely vital program that funds sewage treatment construction is being excessively reduced from levels that are already severely underfunded. A review of the program's evolution over the last eight years helps explain our concern.

Reforms to the construction grants program were offered as part of the 1981 amendments to the Clean Water Act. Authorization for grant funding was cut by 50% to $2.4 billion per year from a total of $5 billion per year. In addition, many eligible categories were eliminated and the federal cost share was reduced to 55% from 75%. These compromises were made with an agreement to retain stable funding of the grants program over a 10 year period. This reduction in federal support occurred even though assessments of the state and local need for sewage treatment construction programs exceeded $100 billion nationwide. (The Environmental Protection Agency [EPA] consequently revised the needs assessment estimate to $76 billion.) With these facts in mind, policymakers began evolving a transitory program to move from a program fully funded and controlled by the federal government to one managed financially and conceptually by the states. The ultimate result will be total elimination of the federal grant program and the creation of State Revolving Funds.

As a representative of the states, NCSL actively supports the concept of State Revolving Funds (SRFs). Our concerns arise over funding levels from Congress and how the transition is being implemented by the EPA.

Regarding funding levels, the Clean Water Act as reauthorized in 1987 calls for $2.4 billion per year for construction grants and loans through FY 1991. (Loan money is authorized through FY 1994.) While we are pleased that the House, in H. Con. Res. 268, recommended $2.3 billion in funding for this program in FY 89, we note that this figure is $100 million less than the amount authorized by law. It represents a departure from the phase-out levels the states were told to expect in that legislation.

Although this small decrease from previously committed amounts may be reasonable considering current deficit reduction imperatives, NCSL strongly advises against any further reductions. I understand that a further reduction of 1% to 3.5% may be under consideration. Without full funding, states will be seriously hampered in efforts to promptly and effectively establish revolving funds, and the long-term success of the entire water pollution control program will be compromised. Full funding is especially critical this fiscal year because it is the first year when these funds can be established. Without full funding, the efficient start-up of state revolving funds will be delayed.

Another state concern is how construction grant and loan payments will be transmitted. Prior to 1987, construction grants were always paid in cash. However, beginning with FY 1988 funds, the Environmental Protection Agency has declared its intention to issue Letters Of Credit instead of cash payments to states. Once again, it is particularly critical for the strong and immediate start-up of State Revolving Funds that full cash payments be made to states. We assert this for four reasons.

First, the Clean Water Act directs state matching funds to be in cash and it further requires state matching funds to be the same form as federal payments. Thus, it is clear that federal payments for the State Revolving Funds were intended to be cash payments. Letters Of Credit would violate that provision. In addition, although use of Letters Of Credit to fund specific projects is not unusual, depending on Letters Of Credit for start-up of funds like the State Revolving Funds is unprecedented.

Second, federal tax statutes prohibit federal guarantees on tax-exempt bonds. Since the Letter Of Credit is a federal guarantee, bond experts agree that bonds backed by Letters Of Credit would be taxable. These bonds would thus become less attractive to investors and decrease alternatives available for use of the State Revolving Funds.

Third, a state's ability to leverage the Revolving Fund will be inhibited if Letters Of Credit are used. Bond rating agencies have indicated that Letter Of Credit drawdown is not an adequate substitute for the security offered with backing by cash.

Finally, the Congressional intent appears to have been to allow states to earn interest on the federal capitalization grants, thus contributing to enhancement of the State Revolving Funds over the long-term. Costs to municipalities for loans from the Revolving Funds could also be lower if states were allowed to earn interest on the cash payments. The Letters Of Credit will eliminate that option.

In my home state of Utah, since 1983 we have been operating our own wastewater loan program. We have to date helped to fund 28 projects and nearly $100 million in project costs. In doing so the State purchases a bond from the applicant. A bond is the only form of municipal debt which the State recognizes. In order for the State to purchase a bond, under the Letter Of Credit provisions, it will need to be an incremental bond where disbursements are based on a pre-construction drawdown schedule. The predetermined schedule may hamper the contractor from performing his work as efficiently as he otherwise may, knowing that efficiency and more rapid construction will not result in quicker or increased payments.

The problems created by using a Letter Of Credit instead of cash payments are only one example of how the federal government is still retaining a heavy hand in how states will be able to implement the law. The intent of shifting the program to states was to streamline the process and to allow greater flexibility for tailoring the program to individual needs. Instead, the federal guidelines issued by EPA are restrictive and burdensome. It has been our experience that the federal requirements associated with the EPA grants program have resulted in a cost increase of 20% over similar non-federal wastewater projects. Additionally, it has been much less time consuming to get a non-federal project through planning, design, and into construction because of the lack of "red tape". We are dismayed to see many of these same restrictions in the State Revolving Fund program and concerned that some apparently will remain even after the capitalization grants to our state cease after 1994. The presence of this "federal baggage" makes it necessary to extend more favorable interest terms to the loanees to compenstate for the increased costs. This will result in a decrease in the long-term viability of the program.

In other respects, EPA effectively eliminates creative funding alternatives. For example, in its Guidance Document regarding Revolving Funds, the EPA prohibits using local government repayments on State Revolving Fund loan principal for retiring state revenue bonds that were issued to obtain the state's Revolving Fund federal match requirements. This means state legislatures will have to appropriate general funds, or find alternative sources of revenue to help repay bondholders. This requirement defeats the purpose of issuing state revenue bonds and counting on the loan-repayment stream from the proceeds of those bonds to provide the state match in future years. This constraint is especially critical to revenue-raising potential in western states, such as Colorado and Arizona, where they cannot issue state general obligation bonds because of constitutional limitations. It is also a problem for states like Texas whose energy-dependent economies are still in recession.

The problems associated with Letters Of Credit and reduced funding can only be rectified at the federal level. Therefore, the National Conference of State Legislatures respectfully requests this committee to appropriate full funding of $2.4 billion for this vital program, consistent with the original phase-out agreement in the authorizing legislation and the large unmet need. In addition, NCSL urges Congress to recognize the detrimental effect use of the Letter Of Credit will have on State Revolving Funds. The Letter Of Credit runs counter to the basic premise of the Revolving Funds and ought not be allowed to substitute for cash payments. If our mutual constituents are to continue to be provided with effective and efficient sewage treatment facilities, all parties must honor previously negotiated agreements and the letter of the law.

Thank you for your consideration.

STATEMENT OF AUDREY MCMAHON, ASSOCIATION FOR ADULTS AND CHILDREN WITH LEARNING DISABILITIES

LEARNING DISABILITIES

Senator GRASSLEY. Our next witness is Ms. Audrey McMahon with the Association for Adults and Children with Learning Disabilities.

Ms. MCMAHON. Thank you, Senator Grassley. I am Audrey McMahon, and our association is a voluntary entirely parent-run organization. We are not neurochemists, and we are not budget experts, but we represent 60,000 members who are vitally interested in reducing the incidence of learning disabilities in this country through research and regulation of neurotoxins.

We are grateful to Congress for mandating a committee made up of 13 federal agencies to report on the status of learning disabilities. This green book, which was released in September, is full of constructive information and concrete recommendations which our group is dedicated to helping Congress realize.

The interagency committee which constructed this book, describes learning disabilities as of presumed central nervous system origin and its prevalence is estimated by this extremely prestigious group of federal agencies, is estimated at up to 24 million American citizens afflicted and performing below their apparent potential in cognitive and behavioral skills.

The extent of tragic and human wastage implied in this incidence figure of up to 24 million is self-evident.

The central nervous system is clearly implicated, and the developing human brain is exquisitely vulnerable to insult en utero, Roe, with long-term adverse effects. Real prevention of learning disabilities must concentrate on the prenatal environment. The Environmental Protection Agency can and should be a key player in preventing fetal and childhood brain damage by neurotoxins.

However, the agency is faced with ever escalating demands, coupled with recurring reductions in funds. Last year, less than 1 percent of the Environmental Protection Agency' s research and development budget could be spared for the imperative work of the Neurotoxicology Research Division.

The opportunities and needs which the Environmental Protection Agency describe in their section of this book are fundamental to the prevention of learning disabilities before they occur. We consider this prevention objective the most sane, effective, economic approach to a national problem of learning disabilities of such an extent and probably growing dimensions.

We earnestly ask this committee to study the recommendations in the report we have cited and shortly, also, you will have a report and more recommendations from the Agency of Toxic Substances and Disease Registry, "The Nature and Extent of Lead Poisoning in the United States."

We command this report to your attention. We request $35 million for EPA's exploration research program and $59.5 million for EPA's health effects research laboratory to maintain the potential for research evaluation and regulation of toxic substances in the vital interest of the nation at large and our children, in particular. Thank you so much.

Senator GRASSLEY. Thank you for your testimony.

[The statement follows:]

STATEMENT OF AUDREY R. MCMAHON, ASSOCIATION FOR CHILDREN AND ADULTS WITH LEARNING DISABILITIES, INC.

> The Association for Children and Adults With Learning Disabilities, Inc. recommends: (1) $35 million for EPA's Exploratory Research Grants Program; and (2) $59.5 million for EPA's Health Effects Research Laboratory.

Our Association for Children and Adults With Learning Disabilities, Inc., offers sincere gratitude for the wisdom of Congress in mandating the Interagency Committee on Learning Disabilities to report to Congress on the status of learning disabilities in this country. The incidence figure of up to 10 percent of the population, or 24 million Americans which they estimate, compels attention. Reduction of the incidence of all developmental disabilities is compatible with the mission of the Environmental Protection Agency to protect public health and the environment from the adverse effects of pollution.

The federal agencies were asked to include recommendations to Congress on identifying the causes and possible prevention of learning disabilities. The extent to which exposure to chemicals which are associated with learning and memory defecits contribute to alterations in the vulnerable periods of early brain development is not known. A major recommendation states that research is needed to determine when and how during ontogeny the cognitive process, including learning and memory, are especially subject to toxic insult and what specific toxic substances may be involved.

As a member of the Interagency Committee the Environmental Protection Agency's Office of Health Research has designated their Neurotoxicology Division as the focal point within the Agency for planning, conducting, coordinating, and evaluating a program for studying the effects of physical and chemical agents on nervous system function. Included in this research are studies related to toxicant-induced changes in learning and memory. Yet in fiscal year 1987, neurotoxicological research received less than 1 percent of the research and development budget, insufficient to meet the challenge.

The strategy of the Neurotoxicology Division's program includes examining the toxicant-induced changes in nervous system function. Scientific investigation in the neurotoxicology program should proceed at all levels of neural organization, including functional and structural. In developing the necessary multidisciplinary approach, the program stresses short-term needs, such as toxicology testing on relevant environmental chemicals, and long-term goals, including development of methods to detect and characterize neurotoxic effects, assessments of hazard due to exposure, and establishment of methods to extrapolate animal data to human populations. Within the framework of this strategy, five overall objectives have been identified. These are:

1. Methods development and validation, including evaluation of existing methods, design and evaluation of new methods, and development of testing strategies.

2. Neurotoxicological evaluation (studies of the neurotoxicity of heavy metals, pesticides, and hazardous air pollutants).
3. Determinations of the significance of neurotoxicological indicators for assessing risk in humans.
4. Developmental neurotoxicology (behavioral teratology), which evaluates the effects of perinatal toxicant exposure on the development of the nervous system including the potential of developmental exposures to produce learning disabilities.
5. Studies of mechanisms of action.

In view of the fact that learning disabilities is the most prevalent of all central nervous system dysfunctions we recommend that it will be in the national interest for you to insure these programs get underway without delay and we beg your special consideration on this issue.

STATEMENT OF DR. LUANN E. WHITE, PH.D. , TULANE UNIVERSITY

UNIVERSITY-BASED PROGRAMS IN BASIC RESEARCH

Senator GRASSLEY. Dr. LuAnn White is the assistant dean with the School of Public Health and Tropical Medicine at Tulane University.

Welcome and proceed.

Dr. WHITE. Thank you. I am Dr. LuAnne White, and I appear before you today as toxicologist and assistant dean at Tulane University School of Public Health and Tropical Medicine. The purpose of my testimony today is to commend that you continue to fund university-based programs in basic research within the National Institutes of Environmental Health Sciences that were authorized by the Superfund Amendments and Reauthorization Act of 1986.

As a toxicologist, I am involved with the public health investigations dealing with environmental contaminants. I serve as a principal investigator of the St. Gabriel Miscarriage Study for the Louisiana Department of Public Health and Human Resources.

I would like to use this investigation as an example of why we need basic research that will compliment our on-going field investigations. The community of St. Gabriel, La., is a prime example not only of Louisiana' s dilemma, but one which faces the entire nation: the struggle to balance economic problems with the impact of industries on the environment.

ST. GABRIEL, LA., CANCER RATES

St. Gabriel is located in the industrial corridor between New Orleans and Baton Rouge, where one-quarter of the annual U.S. petrochemical production originates. This same area has one of the highest cancer rates in the country. While the high cancer rate has not been scientifically linked to the chemicals there, the people perceive this to be the case.

In the present investigation, the citizens of St. Gabriel have become concerned with the number of miscarriages they have observed in their city, and they feel it is linked to the chemicals in the environment. They feel that their long-term health is being damaged, and they feel helpless to do anything about it.

Unfortunately, there is no clear-cut answers from scientists about the relationship of miscarriages or, for that matter, other health effects and environmental agents.

The first step in St. Gabriel is to identify and document the problem. This study is now underway, and the data is being gathered to assess the rate of miscarriage. While the study will address one question, it will not fully address the citizens' concerns about the impact of contaminants on their health. The underlying fears of the citizens will not be allayed, because the basic questions cannot yet be answered.

The reasons these questions cannot be answered is that there is a parcity of scientific data that relates the presence of chemical contaminants with health effects in populations.

The citizens of St. Gabriel can see and smell signs of chemical agents. They want to know how this affects their health. The fears of communities such as St. Gabriel center on long-term effects such as cancer of reproductive effects which may result from exposure to low levels of agents in the air or water.

The data and the methodologies are not yet available to make these kinds of determinations in public health investigations in communities that are faced with these problems.

NEED FOR PROFESSIONALS TO ADDRESS COMMUNITY CONCERNS

Public health professionals must grapple with the lack of data to address their fears and concerns of the citizens. There should also be programs which foster the promotion of communication between scientists and the communities as well as between science and news media. Scientists tend to be poor communicators with the public at large.

Without the full $20 million funding authorized by for university-based programs' basic research, our efforts in this area will be severely hampered. For this reason, I request that you fully fund this program in order that we in the scientific community may carry out the absolutely essential task of assessing the effects of environmental contaminants on the health of our citizens.

Thank you.

Senator GRASSLEY. Thank you, Dr. White. That is the last witness for this panel. I have no questions of any of you, so I will call the next panel and thank each of you very much.

[The statement follows:]

STATEMENT OF LUANN E. WHITE, PH.D., ASSISTANT DEAN, SCHOOL OF PUBLIC HEALTH AND TROPICAL MEDICINE, TULANE UNIVERSITY

I appear before you today as a toxicologist and as an assistant dean of Tulane University'a School of Public Health and Tropical Medicine. The purpose of my testimony is to recommend that you continue to fund university-based programs of basic research within the National Institute of Environmental Health Sciences (NIEHS) authorized by the SARA of 1986 at the $20 million level.

As a toxicologist, I am involved in the assessment of public health problems associated with the presence of chemical agents in the environment in Louisiana. I serve as the principal investigator of the St. Gabriel Miscarriage Study which is addressing the rate of miscarriages on the east bank of Iberville Parish (county), for the Louisiana Department of Health and Human Resources in coordination with the Agency for Toxic Substances and Disease Registry and the Centers for Disease Control. The problem in St. Gabriel has drawn considerable attention from the National media with stories appearing in the Washington Post, U.S. News and World Reports, as well as NBC and the British Broadcasting System. I will describe my work at St. Gabriel later in my testimony, but first let me tell you about the state of Louisiana's economic and environmental problems and describe their relationship to the need to continue research in the area of environmental contaminants and human health effects.

The state of Louisiana is a microcosm of the intensifying struggle to balance economic demands and environmental needs. Louisiana's economy is directly or indirectly dependent on the oil and gas industries and their spin-off -- the petrochemical industry. According to recent statistics by Phillips Chemical, Inc., except for tourism, the chemical industry may be Louisiana's only growth industry, with a 1.5 to 2 percent increase projected over the next year. The recent downturn in the oil industry has resulted in an 11.5 percent unemployment rate, the second highest in the nation and nearly four points above the national average. The state has a current budget deficit of close to $2 billion dollars.

Louisiana has to address the question of economic and industrial development with the protection of health and the environment. There must be a cooexistance between the people of Louisiana and industries which may impact the environment, but are economically essential. Our state's economy and the health of our citizens are interdependent. The burden of successfully solving this dilemma must be equally shared. The evaluation of the effects of hazardous waste and toxic contaminants on human health will contribute to achieving both outcomes. In a perfect world the insult of the environment by toxic materials would be halted and the national attempt to clean up hazardous waste sites would be successfully completed with dispatch. However, in the imperfect real world, a balance between economic survival and environmental effects must be found. Research provides a tool to generate the information to balance both objectives.

The community of St. Gabirel, Louisiana is a prime example of not only Louisiana's dilemma, but one which faces the entire nation. St. Gabriel is located in the 85-mile long industrial corridor between New Orleans and Baton Rouge where one-quarter of the annual U.S. petroleum production originates. In this ten-parish region along the Mississippi River, according to 1984 statistics, over 40 percent of Louisiana's population lives side by side with 136 petrochemical plants and several oil refineries. In addition, the majority of the hazardous waste sites in

Louisiana on the National Priority List are located in this region (from the greater Baton Rouge area down to the New Orleans Area).

The concerns of the people of Louisiana and St. Gabriel are real. This industrial corridor has one of the nation's highest lung cancer mortality rates for black males, 25 percent higher than the national average during the 1970's. Six of the ten river parishes rank among the top ten percent of the U.S. counties for such deaths. At least one of the ten river parishes ranks among the top five percent nationwide in deaths caused by cancer of the lung, stomach, gall bladder, intestine, liver, pancreas, bladder, thyroid, esophagus and skin. While the cause of this high cancer rate has not been scientifically linked to chemicals in the environment, the people perceive this to be the case.

In 1987, the citizens of St. Gabriel became concerned with the number of miscarriages they observed in their community. An informal survey by the local pharmacist heightened their alarm. It was the opinion of the community that the miscarriages were linked to air borne contaminants. The rate of cancer in the area is also of concern to the community. The residents of St. Gabriel are afraid that chemical contaminats in the environment are damaging their long-term health, and they feel helpless to do anything about it. They have turned to the local, state and federal agencies for assistance. The Louisiana Department of Health and Human Resources came to the scientific community at Tulane's School of Public Health and Tropical Medicine for help in addressing the problem.

Unfortunately, health professionals do not yet have the answers to the questions constantly asked by communities concerning the relationship of health effects with environmental contaminants. The first step at St. Gabriel is to identify and document the rate of miscarriage in the community. Miscarriage is not a statistic which is kept by state or national health officials. In addressing the problem, methodology to assess accurately the rate of miscarriage among women of childbearing age had to be developed. The study is now underway and data are being gathered to identify the problem. Once a community wide rate is established, this data will enable public health professionals to determine if St. Gabriel has an elevated rate of miscarriage. While this data will help public health professionals define a problem, it will not fully address the community's concern about the impact of environmental contaminants on their health. The underlying fears of the citizens of that community will not be allayed because the basic question cannot yet be answered.

The reason these questions can not be answered at this time is that there is a paucity of scientific data relating the presence of chemical contaminants with health effects in populations. The citizens of St. Gabriel can see and smell signs of contamination. They want to know how this affects their health.

Vast data gaps exist in scientific knowledge in regard to the occurrence of human health effects from chemical agents. Data which is available generally addresses the acute effects, that is, the effects which occurr immediately from relatively high doses of an agent. In the environment, the levels of contaminants are likely to be lower than that which produces immediate effects. The fears of communities such as St. Gabriel, center on the long term effects which may result from exposure to low levels of contaminants in the air and water. Cancer, immunological suppression, or possible adverse reproductive outcomes may result from these kinds of long term, low level exposures. However, the data and methodologies are not available to make these kinds of determinations in communities faced with the problems. Public Health professionals must grapple with this lack of data daily as we try to address the fears and concerns of citizens.

To answer the questions put forward to health professionals daily, more basic and applied health research is needed. A combination of basic laboratory studies and epidemiological field investigations can provide a coordinated attack on the problem. Data gaps exist at every level of science, and the following are some of the areas upon which attention must be focused:

* Basic biomedical research to investigate the types of health effects that may be caused by chemical agents present in the environment;
* Studies describing the conditions by which contaminants cause health effects, that is, the dose, the routes of exposure, metabolism and distribution and the length of exposure which lead to these health effects as they relate to concentrations found in the environment;
* Studies which employ mixtures of chemical agents that are frequently present at hazardous waste sites;
* The effects of chemicals on a spectrum of diseases and disorders including cancer, reproduction, development, immune system, behavior, the nervous, hepatic and renal systems;
* Methodology for scientifically sound and fiscally responsible epidemiological studies which evaluate the occurrence of health effects;
* Coordination of laboratory and field studies based on actual sites which will help in the assessment of community based problems.

In addition, there should also be programs which will foster the promotion of communication between the scientists and the community as well as scientist and the news media. Scientists tend to be poor communicators with the public at large. The exchange of information may help communities better understand the information which is available.

Few of these ideas are new, but their implementation will help provide some answers to the questions that arise from concerned communities, such as St. Gabriel. In 1986 when the U.S. Congress passed the SARA and authorized $20 million dollars for university-based research through NIEHS to determine the effects of hazardous waste on human health, a giant step toward answering the environmental dilemma was taken. The St. Gabriel Study demonstrates the need to continue to seek, through a combination of basic and applied research, the answer to the question which arises daily: Are environmental contaminants affecting the long term health of the citizens of Louisiana and the nation?

Without the full $20 million funding authorized for the university-based programs of basic research within NIEHS in the SARA of 1986, our efforts in Louisiana and throughout the nation will be severly hampered. For this reason, I request that you fully fund this program in order that we in the scientific community may carry out the absolutely essential task of assessing the effect of environmental contaminants on the health of our citizens.

ADDITIONAL PREPARED STATEMENTS

Senator GRASSLEY. Before proceeding to the panel on the Department of Housing and Urban Development, I would like to introduce into the hearing record additional prepared statements concerning the Environmental Protection Agency budget. Without objection, it is so ordered.

[The statement follows:]

STATEMENT OF THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA

The Associated General Contractors of America and its 104 chapters nationwide represents more than 32,500 firms, including 8,000 of America's leading general contracting companies which are responsible for the employment of more than 3,400,000 individuals. These member contractors perform more than 80 percent of America's contract construction of commercial buildings, highways, industrial and municipal-utilities facilities.

AGC is deeply concerned with the Administration's proposal to slash the EPA clean water budget by $900 million in fiscal year 1989. This proposal seriously threatens the ability of the nation to meet its current wastewater treatment needs and significantly undermines the effort to put into place the financial mechanisms to meet the nation's future wastewater treatment needs. AGC strongly urges this subcommittee to fund this program in FY89 at the full authorized level of $2.4 billion contained in the Water Quality Act of 1987.

Since 1972, when Congress passed what is now commonly called the Clean Water Act, the Federal government has taken a strong lead role in the construction of publicly owned wastewater treatment facilities. This program has resulted in the investment of some $66 billion, including over $44 billion in federal funds, in these facilities. The result has been a significant and dramatic improvement in the quality of our nation's waters with over 47,000 miles of monitored streams markedly improved.

However, despite tremendous progress the job remains unfinished. EPA's 1986 needs survey documents some $76.2 billion in treatment needs by the year 2005. It must be kept in mind that this number was derived using very strict and newly established criteria for documenting the needs. It must also be pointed out that this needs estimate does not include water treatment items which are ineligible for federal funding.

In addition, the National Council on Public Works Improvement recently released its final report on the status of the nation's infrastructure. This report rates the quality of our wastewater treatment at a C grade level. The Council emphasizes that the current level of investment has allowed the nation to maintain water quality at a constant level over the past decade but not to make any further improvements. The failure to make improvements, despite what appears to be a major investment, is due to population and industry growth. Therefore, at this crucial time, the Congress must not turn its back on this major investment and allow a deterioration of our existing wastewater infrastructure nor allow the achieved water quality to be diminished by not continuing to meet existing and growing treatment needs.

When Congress was considering reauthorization of the Clean Water Act, two overriding concerns were at the heart of the debate. The primary concern was to continue progress towards clean water. The other concern was the federal deficit. Because of continued serious budget deficits, it became apparent to supporters of the clean water program that the federal government could no longer be counted on as the source of future funding.

Congress made the hard choices necessary to remove this program from federal responsibility and yet maintain a successful clean water program. The Water Quality Act set up reasonable and responsible funding levels which allow a gradual decrease in federal responsibility and the establishment of state revolving loan funds to meet the future needs. This program change was fully supported by AGC.

The Act provided that federal capitalization grants will initially be provided to the states to establish revolving loan funds and states will be required to match the grants with a 20 percent contribution. The aspect of this program which makes it so promising is that the funds will be self-perpetuating because local governments will be required to establish a dedicated source of revenue for repayment of the loan. The Act also requires the loan recipient to establish a user charge system.

Fiscal year 1989 is the first critical year in this weaning process, and already the program has been subject to two major assaults. The first assault came when EPA decided that, instead of paying the capitalization grants as cash to the states to establish their revolving loan funds,EPA would instead make the payments as a letter of credit. The use of letters of credit, in lieu of cash, will effectively eliminate over $2 billion in clean water funding over the next seven years. The long term impact would be even more significant. These are funds that had been anticipated and counted on by the states when support for this legislation was being solicited. It is absolutely essential that to be effective, these capitalization grants be paid upfront to the state revolving loan funds .

The second assault is the Administration's budget proposal. Fiscal year 1989 marks the beginning of the end of the construction grants program and the beginning of the state revolving loan fund program. The Administration's budget request would reduce each of these two programs by more than thirty-seven percent, from $1.2 billion each, down to $750 million. These funding levels are totally inadequate for providing a smooth transition from a federal program to a state program. Without sufficient seed money to establish the revolving loan funds on a sound basis, it is questionable whether the states can ultimately be successful.

The ramifications of an unsuccessful revolving loan fund program are significant. First, and foremost, clean water progress will be halted and most likely be reversed. In addition, the lack of success by the loan funds could lead to an effort to once again involve the federal government in the funding of this program. Neither of these results is desirable but both are an all-too-real possibility if the loan funds are not given the chance to be successful by being fully and properly funded.

The clean water program has contributed substantially to the deficit reduction efforts over the past few years. The program funding has been cut nearly in half from what it was only eight years ago. In addition, in each of the past three fiscal years the authorized funding level has been cut. Movement of the program to revolving loan funds will have a significant, positive impact on deficit reduction, but first the program must be allowed to work.

The necessity of providing adequate public works is fundamental to ensure a solid foundation for economic development in this country. Future economic growth and our nation's international competitiveness depends on adequate public facilities. The National Council on Public Works Improvement recently concluded in its final report, "the quality of America's infrastructure today is barely adequate to meet current requirements and insufficient to meet the demands of future economic growth." Clean water facilities are a vital element of our national infrastructure. The clean water program is at a critical juncture. The framework is now in place for ensuring that our nation will be able to meet its growing clean water needs. However, the success of the transition from a federal to a successful state program depends on Congress complying with the commitment made in the 1987 Act. AGC urges you to honor this commitment and fund the clean water program at the full $2.4 billion level.

STATEMENT OF THE NATIONAL ASSOCIATION OF STATE DEPARTMENTS OF AGRICULTURE

MR. CHAIRMAN, AND MEMBERS OF THE SUBCOMMITTEE, I AM J.B. GRANT, EXECUTIVE SECRETARY OF THE NATIONAL ASSOCIATION OF STATE DEPARTMENTS OF AGRICULTURE. I AM PLEASED TO SUBMIT THIS STATEMENT ON BEHALF OF NASDA AND THE ASSOCIATION OF PESTICIDE CONTROL OFFICIALS, INC.

THE PESTICIDE ENFORCEMENT STATE COOPERATIVE AGREEMENTS ARE IN DESPERATE NEED OF INCREASED FUNDING TO ASSIST THE STATES IN COMPLYING WITH NEW REGULATORY MANDATES DEVELOPED BY EPA TO PROTECT HUMAN HEALTH AND THE ENVIRONMENT FROM THE POTENTIAL DANGERS OF PESTICIDE USE. THE 1988 FUNDING LEVEL FOR THIS PROGRAM IS ESSENTIALLY IDENTICAL TO THAT OF 1979. IN 1979, THERE WERE FEWER STATES, FEWER STATE EMPLOYEES AND THE PROGRAM WAS LESS COMPLEX AND SUBJECT TO MUCH LESS PUBLIC OR CONGRESSIONAL SCRUTINY. FUNDING IN REAL DOLLARS HAS ACTUALLY DECREASED ABOUT 16 PERCENT. FUNDING HAS NOT COME CLOSE TO KEEPING PACE WITH NEW REGULATORY DEMANDS, INFLATION, OR NEW PROGRAMS. THE NORMAL OBSOLESCENCE OF ANALYTICAL AND SUPPORT EQUIPMENT PLACES ADDITIONAL BURDENS ON GROSSLY INADEQUATE FUNDS.

AN EPA COMPARISON OF THIS PROGRAM WITH ANOTHER MAJOR AGENCY GRANT PROGRAM, THE SEC. 105 AIR COMPLIANCE GRANT PROGRAM, IS REVEALING.

- RECENT FEDERAL FUNDING LEVELS FOR SEC. 105 GRANTS IS ABOUT $33.4 MILLION, COMPARED WITH $8.7 MILLION FOR PESTICIDES ENFORCEMENT GRANTS.

- SEC. 105 GRANT MANAGEMENT AND OPERATIONS INVOLVE ABOUT 140 EPA REGIONAL STAFF AND 3,350 STATE PERSONNEL. THE COMPARABLE NUMBERS FOR THE PESTICIDES ENFORCEMENT GRANT PROGRAM ARE 36 EPA PERSONNEL AND 400 STATE EMPLOYEES.

- DESPITE THIS DESCREPANCY IN RESOURCES, SEC. 105 GRANTS COVER A MUCH SMALLER UNIVERSE. THE AIR COMPLIANCE PROGRAM DEFINES A REGULATED COMMUNITY OF ABOUT 46,000 SOURCES. THE MEASURABLE UNIVERSE THAT EPA ATTEMPTS TO REGULATE THROUGH THE PESTICIDES ENFORCEMENT GRANT PROGRAM IS ABOUT 1,800,000. THIS INCLUDES 1,600,000 CERTIFIED APPLICATORS, USERS OF PESTICIDES, WHICH ARE OF GREATEST CONCERN TO EPA AND STATE COMPLIANCE EFFORTS.

- SEC. 105 RESOURCES ALLOW THE STATES ANNUALLY TO INSPECT NEARLY 50 PERCENT OF THEIR UNIVERSE. IN THE PESTICIDES ENFORCEMENT GRANT PROGRAM, THE STATES ARE ABLE TO INSPECT 3 PERCENT OF THE REGULATED COMMUNITY.

- THE SEC. 105 GRANT PROGRAM EXPERIENCES A VIOLATION RATE OF APPROXIMATELY 10 PERCENT. THE VIOLATION RATE FOR THE PESTICIDES ENFORCEMENT GRANT PROGRAM IS 19 PERCENT.

THIS SITUATION WOULD BE EXTRAORDINARY EVEN WITH A STABLE REGULATORY PROGRAM. HOWEVER, THE CONGRESS AND THE AGENCY ARE DEVELOPING AN INCREASINGLY WIDE-RANGING, SOPHISTICATED AND COMPLICATED REGULATORY SCHEME THAT IS STRETCHING LIMITED STATE RESOURCES TO A BREAKING POINT. THE AGENCY HAS IMPLEMENTED OR WILL SOON IMPLEMENT NEW REGULATORY PROGRAMS IN THE AREAS OF GROUNDWATER CONTAMINATION BY AGRICULTURAL CHEMICALS, FARMWORKER SAFETY, AND ENDANGERED SPECIES PROTECTION, AND HAS EXPANDED THE FIFRA, SEC. 3 (C)(2)(B) CANCELLATION AND SUSPENSION PROGRAM. ALL OF THESE FUNCTIONAL RESPONSIBILITIES FALL UPON THE STATES TO ADMINISTER -- WITH NO INCREASE IN FUNDING.

AT THE SAME TIME THERE IS INCREASED PUBLIC KNOWLEDGE AND INTEREST IN THE THREATS POSED BY PESTICIDE USE, AND GREATER CONGRESSIONAL ATTENTION PAID TO EPA'S PESTICIDES REGULATORY PROGRAM. THE LIKELIHOOD IS THAT WITHOUT SIGNIFICANT ADDITIONAL FUNDING THE STATES WILL BE UNABLE TO EXPAND THEIR ACTIVITIES INTO NEW REGULATORY AREAS WHILE MAINTAINING THOSE COMPLIANCE PROGRAMS THEY HAVE ATTEMPTED TO SUPPORT TO DATE. IN THIS SITUATION, THE NET EFFECT FOR THE AGENCY MAY BE OVERBURDENED STATE PROGRAMS, LOWERED PUBLIC CREDIBILITY AS TO THE ABILITY OF EPA OR THE STATES TO OFFER PROTECTION FROM THE DANGERS OF PESTICIDE USE, AND GREATLY INCREASED PRESSURE FROM CONGRESS. THE PREFERRED ALTERNATIVE IS FOR THE AGENCY TO PROVIDE A RESPONSIBLE LEVEL OF FUNDING FOR THE STATES TO SUPPORT THE KIND OF COMPREHENSIVE AND CREDIBLE PROGRAMS WE ENVISION.

IN SUMMARY, EPA SHOULD BE PROVIDED SUFFICIENT FUNDS DIRECTED FOR USE BY THE STATES TO SATISFY THE ETERNALLY EXPANDING RESPONSIBILITIES IN PESTICIDE EDUCATION AND ENFORCEMENT RESULTING FROM FEDERAL ACTIONS AND ABDICATIONS OF JOINT RESPONSIBILITY. THE AMOUNT OF FUNDS NECESSARY TO ACCOMPLISH THIS WILL BE ELUCIDATED BY THE RESULTS OF A SURVEY CURRENTLY BEING CONDUCTED BY AN AAPCO TASK FORCE. THE RESULTS OF THIS SURVEY ARE NOT COMPLETE BUT THE RESPONSES OF 12 STATES ARE SUMMARIZED TO SHOW WHAT THE STATES FEEL IS NECESSARY FOR A QUALITY PROGRAM.

AVERAGE OF 12 STATES' RESPONSES

1. PERCENT INCREASE NEEDED IN BASIC ENFORCEMENT GRANT WITHOUT NEW PROGRAMS.

1989	1990	1991
143%	170%	173%

2. PERCENT INCREASE NEEDED IF NEW PROGRAMS INCLUDED.*

1989	1990	1991
244%	299%	303%

3. PERCENT INCREASE NEEDED IN CERTIFICATION GRANT WITHOUT NEW PROGRAMS.

1989	1990	1991
189%	213%	226%

4. PERCENT INCREASE NEEDED IN CERTIFICATION GRANT WITH NEW PROGRAMS.*

1989	1990	1991
313%	385%	392%

5. PERCENT INCREASE NEEDED IN TRAINING GRANT WITHOUT NEW PROGRAMS.

1989	1990	1991
189%	213%	226%

6. PERCENT INCREASE NEEDED IN TRAINING GRANTS INCLUDING NEW PROGRAMS.*

1989	1990	1991
318%	382%	405%

*NEW PROGRAMS: GROUNDWATER PROTECTION, ENDANGERED SPECIES AND FARM WORKER SAFETY.

STATEMENT OF THE AMERICAN WATER WORKS ASSOCIATION RESEARCH FOUNDATION

I wish to thank the Committee once again for the confidence it showed in the American Water Works Association Research Foundation by investing three straight $1 million add-ons in FY 84, 85, and 86 to help us demonstrate the concept of a water utility industry funded program for research and development.

At such an early date, all we could promise was that the water utilities industry would match the Committee's $1 million add-ons dollar for dollar and work to develop a self-supporting program within three years.

At that time, our greatest challenge was demonstrating to water utilities that a self-funded program of research made sense. The $3 million Committee investment was a key factor in this process. Before utilities would buy into such a program, we had to have some way of convincing them that there would be a real pay-off in terms of dollars and cents saved through improved daily operation of their water utility. The Committee's add-ons helped us to create the initial body of research that has proved to be so successful in selling a new concept to the American and Canadian water utilities industry.

The concept of the Research Subscription Program is simple. Participating utilities voluntarily subscribe 90 cents per million gallons of delivered water annually. Participation is approved by local rate-making bodies whether it be a city council; board of water commissioners; or in the case of investor owned utilities, the state public utilities commission. The cost to the average domestic connection is about 10 to 12 cents per year.

Although participation is completely voluntary, I am sure that you will be gratified at the response of water utilities and local governments from around the country.

During its first year of operation in 1986, some 116 utilities subscribed $1.3 million to launch the Research Subscription program. In 1987 the number of participating utilities had doubled to 228 and a total Subscription of over $2.5 million. This number will increase once again in 1988 to over 375 participants and research funding in excess of $5 million. In addition to utilities who subscribe 90 cents per million gallons, an additional 3,000 utilities pay dues to the Foundation which go to support the research program.

I might note that our subscription participants currently include 22 of the 25 largest water utilities in the nation. This includes Boston, New York City, Washington D.C., Atlanta, Houston, Dallas, Denver, Kansas City, Chicago, Minneapolis/St. Paul, Denver, Salt Lake City, Los Angeles, San Diego, Seattle, and many more.

This means that 84% of the largest water utilities who serve a majority of the American public are already subscribers. We expect the other 3 major utilities to become subscription participants in the near future. They have been joined by hundreds (and what we believe in the future will be thousands) of their medium and small sized colleagues who are already participants or have announced they will be joining in 1988.

We feel that this response from the water utilities industry will help to redress the more than 70% reduction in EPA funded research into operation and maintenance problems of water utilities during the early to mid-1980's.

Our subscription program is underwriting the kind of applied operational research that helps every size of water utility to provide better quality water at an affordable price. We are helping to give utilities cost-effective options for complying with the new provisions of the Safe Drinking Water Act, as well as new ideas on such basic issues as filtration, taste and odor, rehabilitation, treatment plant renovation, and health effects, to name only a few. These activities impact the daily operation and maintenance of water utilities in every part of the country and accordingly, affect virtually every man, woman, and child in the United States.

We also understand that innovative research must be paired with equally imaginative technology transfer so that the results are made accessible to the grass roots constituency of the industry. We feel that our technology transfer programs are doing just that.

In 1988, hundreds of water utility employees will attend the six technology transfer workshops in which AWWARF will present the results of our completed research projects. We also hold international symposiums on issues of interest to large numbers of water utilities and poster sessions at water utility conferences which bring the researchers who conduct our projects together with the water utility personnel who will use the results of our projects.

In addition to our publications on completed research, the Foundation also provides its subscribing participants with constantly updated summaries of project results from which they can order desired publications and studies. We have also produced VHS tape presentations for issues of special interest to our membership such as control of Giardia in water systems.

Finally, we have also established close working ties with water utility research institutes in Holland, Great Britain, France, Japan, West Germany and a number of other countries. The result has been the sharing of over $4 million in free research already completed by our European colleagues, as well as an increasingly free exchange of ideas and technologies.

We believe that the response of the water utilities industry to decreases in federal funding for water utility operational research has been imaginative, bold, and increasingly effective. We have already secured the subscription participation of hundreds of utilities and the dues support of thousands of others. These utilities are both creating and simultaneously buying into a $5 million a year research program that could grow to over $10 million a year by the mid-1990's.

For all its growth and outreach, the Research Subscription Program is only one response to the formidable problem of providing safe drinking water to the American public. We strongly urge that the Committee give the most careful consideration towards providing increased funding for EPA drinking water R&D activities. It is only through a partnership between local utilities, the Congress and federal agencies such as EPA, that we can together realize the dream of safe, affordable drinking water for the United States. Thank you.

STATEMENT OF JOHN T. BLONG, CHANCELLOR, EASTERN IOWA COMMUNITY COLLEGE DISTRICT

I am writing as a concerned environmental educator to urge your support for funding Academic Training by the Environmental Protection Agency.

In 1987, the HUD and Independent Agencies Appropriations Bill (HR2783) passed by the House included an appropriation of $2 million for academic training under the "Abatement, Control, and Compliance" section of EPA. The Senate version did not, and, unfortunately, the final joint appropriations bill failed to fund EPA Academic Training.

Congress must be complimented for including academic training as part of the HUD and Independent Agencies appropriations during the previous 13 years. I sincerely hope this year's omission will be corrected and this much needed appropriation will be included in the FY 1989 Budget.

I believe the elimination of academic training is a mistake compounded by efforts in the Office of Management and Budget to restrict training and manpower development activities at the Environmental Protection Agency. Congress has the opportunity with direct funding of EPA's Academic Training program to insure a minimum level of manpower planning and training by the agency.

My personal experience with environmental training dates to the late 1960s and early 1970s when regulatory activities were first consolidated as part of the Environmental Protection Agency's responsibilities. At that time, EPA recognized the need for training and maintaining a knowledgeable workforce capable of implementing mandates established by Congress.

Each program office within EPA operated manpower development and training programs. A headquarters manpower planning group coordinated training and manpower assessment on an agency-wide basis and between media programs.

The EPA manpower development program in place during the early 1970s provided training for every state in the nation. State and local environmental regulatory personnel have praised that program as being the "best link" between themselves and the federal government. The activities EPA participated in included:

1. Needs assessments to determine manpower and training requirements associated with new regulations,

2. Training assessments to determine the availability of training to meet the requirements of new regulations,

3. Development and support of academic training to increase the supply of trained personnel in areas where deficiencies existed,

4. Development of training materials which "put to use" EPA-sponsored research. (Such materials were used by state and local agencies as well as the academic and the private sector in upgrading the skill and knowledge level of the entire environmental workforce.)

I believe that credit for improving this nation's environment during the 1970s and early 1980s must be given to a strong EPA academic training and manpower development effort during the early 1970s. This program resulted in a well-trained regulatory workforce during the entire decade.

Unfortunately, good programs do not always continue. During the mid-1970s, actions by the Office of Management and Budget effectively dismantled manpower development and training at the Environmental Protection Agency. To give some examples of OMB's actions and the Agency's current attitude toward training, I present the following examples:

1. Manpower development positions and program funding have been eliminated at the Environmental Protection Agency.

2. While the "Clean Air Act" requires federal training for state and local air pollution control personnel, contract funds for air pollution training have not been appropriated since 1985.

3. Funds have not been made available to upgrade existing EPA training courses which would be useful to state and local agency personnel if updated.

4. The EPA water/wastewater training center in Ohio, once considered a showcase and cost effective environmental training center, was dismantled in 1981 eliminating 50 positions dedicated to water and wastewater training.

5. Academic training, funded each year since 1975, failed to be included in the 1988 appropriation.

A look at EPA today shows an agency spending over $300 million annually on research and development. The Office of Research and Development has initiated technology transfer programs, but funding and positions have not been allocated to assess the need for training or to transfer the knowledge for practical applications of the research findings.

To state that Congress has not allocated money for training would be incorrect. Funding has been designated by Congress for specific environmental training. Superfund, for example, has provided large amounts of training money for specific types of health and safety training. Similarly, asbestos legislation has provided funds to states for training certain types of asbestos workers. Unfortunately, many EPA programs are falling between "legislative cracks." Funds are not available for activities such as training to conduct needs assessments, manpower planning, training in subject areas which cross program boundaries, updating obsolete training courses, and traditional environmental training not addressed in recent federal legislation.

Under existing conditions, training money appropriated by pollutant specific legislation is being provided to an agency without a coherent or long-range manpower planning organization. With no manpower planning and training organization of EPA, one must question how effectively appropriated money will be spent.

It is my strong opinion that the Environmental Protection Agency requires direct funding from Congress for manpower planning and development activities, including funding for the development and update of EPA training courses as well as funds for academic training programs. Such funding would support manpower development and training activities which are not addressed in issue specific environmental legislation.

As an example of what can be done with small amounts of Academic Training funds, I would like to describe some of the programs Eastern Iowa Community College District has undertaken.

EPA provided a grant to EICCD to develop a prototype Hazardous Materials Technician Training program. This unique program is competency-based and has been developed in a modular format. It teaches students to deal with a wide variety of hazardous materials in accordance with state and federal legislation and regulations. Air, water, and solid waste training is provided. Now that the full curriculum has been developed, we are ready to distribute it to community colleges across the country. In fact, we have already received inquiries from 50 institutions.

We made a commitment to continue the program using other resources. To do this, we have formed the Hazardous Materials Research and Training Institute with cooperating community colleges. Through this institute we will be able to disseminate the curriculum that has been developed. We will also provide training and other assistance to colleges adopting the curriculum to assure they can do so successfully. Thus, the result of one year of EPA assistance is a quality environmental training program which can be disseminated and replicated nationally at no cost to the federal government.

Another effort initiated with EPA funding is the development of an Environmental Workforce Estimator. The Environmental Workforce Estimator provides trainers and planners with a method for determining manpower requirements associated with a variety of environmental programs. The Environmental Workforce Estimator, for example, will estimate state and local staffing requirements associated with removal and inspection of asbestos in schools. It will provide quantitative estimates of training needs associated with implementing such a program. Using an accurate estimate of staffing and training needs associated with federal programs, state and local governments as well as training institutions can better direct their budgeting, recruitment, and training efforts.

I have given two examples of projects which would not have been initiated without EPA assistance. Without congressional funding for EPA Academic Training, both of these successful and cost effective programs would have remained "good ideas."

EPA funding for manpower planning and Academic Training helps the entire nation. Those who will benefit most from this funding are state and local environmental agencies who must enforce the increasingly complex regulations resulting from federal legislation.

An uninformed, undertrained workforce will only diminish efforts to improve the quality of this nation's environment.

Thank you for your time and consideration.

STATEMENT OF THE NATURAL RESOURCES DEFENSE COUNCIL

I am David A. Wirth, Senior Attorney with the Natural Resources Defense Council (NRDC). NRDC is a national nonprofit environmental organization with more than 80,000 members distributed through every state.

For more than a decade, NRDC has been one of the leading environmental organizations working to protect the stratospheric ozone layer. NRDC was instrumental in obtaining the ban on nonessential aerosol uses of CFCs promulgated in 1978. NRDC brought a lawsuit in 1984 that was instrumental in obtaining domestic action to protect the ozone layer and catalyzed international concern about the issue. We also closely monitored and participated in negotiations on the Montreal Protocol on Substances That Deplete the Ozone Layer, which was signed last September and recently ratified by the United States.

Mr. Chairman, I am here today to request that this Subcommittee make major additional resources available for the work of three key agencies on this crucial issue -- the Environmental Protection Agency (EPA), the National Aeronautics and Space Administration (NASA), and the National Science Foundation (NSF). Recent scientific findings demonstrate that risks from stratospheric ozone depletion are far more serious than previously thought. These new developments demonstrate the urgent need to devote far greater resources to this issue than the Administration's patently insufficient budget request, which was prepared before this highly disturbing new evidence was available.

Accordingly, NRDC requests this Subcommittee to increase the appropriation for EPA's stratospheric ozone abatement and control account by $10 million over the Administration's request. We also request the Subcommittee to appropriate a combined total of $90 million more than Administration's request to NASA and NSF for research in this crucial area.

I. THREATS TO PUBLIC HEALTH AND ENVIRONMENT FROM OZONE DEPLETION

Forty kilometers above the surface of the Earth is a thin invisible shield of the chemical ozone that protects life on our planet from harmful levels of ultraviolet (UV) radiation emanating from the sun. If this stratospheric ozone layer is depleted or destroyed, the results would be catastrophic.

Scientists have connected increased exposure to UV radiation with a number of serious health effects on human beings, such as potentially fatal basal cell, squamous cell and melanoma skin cancers, premature cataracts, and AIDS-like suppression of immune responses. Impacts on critical components of the global ecosystem could be equally dramatic. Elevated levels of UV radiation have been correlated with disruptions at the base of the aquatic food chain that is essential to life in the oceans and reduced yields from crop plants crucial to human food supplies. Ironically, increased UV radiation from depletion of stratospheric ozone also encourages the formation of ozone at ground level, where it is a pollutant and the principal cause of photochemical smog.

Chemicals known as chlorofluorocarbons (CFCs) are the principal destroyers of stratospheric ozone. CFCs are not known in nature, but are created strictly by industrial processes. These chemicals are extremely stable and have very low human toxicity. For precisely these reasons, they are now ubiquitous in industrial and domestic uses. Related chemicals known as "halons," which are found in fire extinguishers, are even more potent ozone destroyers than CFCs.

Despite growing public concern about their environmental effects, global production of these chemicals reached an all-time high in 1987. CFCs are found in refrigerators, air conditioning systems for buildings and automobiles, foam packaging, and aerosol spray cans. Virtually the entire production volume of these volatile chemicals will eventually be emitted to the atmosphere.

II. THE NEED FOR FURTHER ACTION

In September 1987, twenty-four nations including the United States signed the Montreal Protocol on Substances That Deplete the Ozone Layer, which requires a reduction of 50% in global consumption of CFCs and halons by the end of this century. The United States has just ratified the Protocol, and NRDC is optimistic that it will enter into force as scheduled on January 1, 1989.

However, it is now apparent that the Protocol is insufficient to protect public health and the environment. Over the past several years scientists have documented a seasonal "hole" or thinning of the ozone layer over Antarctica of 40 to 50% during that continent's springtime. In late 1987, when the hole was deeper than ever before and after negotiation of the Protocol was complete, scientists conclusively connected the phenomenon to emissions of manmade CFCs and halons. Researchers have now concluded that the Antarctic ozone hole will last 100 years or more even if worldwide CFC and halon emissions were to be cut by 90 percent.

Even more alarming findings have come to light in just the past few weeks, well after the Administration had transmitted its proposed budget to the Congress. The Ozone Trends Panel, made up of more than 100 scientists, found that the ozone layer is already suffering severe and unexpectedly rapid depletion all over the globe, with CFCs the likely cause. Reports document global losses of 3% in stratospheric ozone -- more than twice that previously estimated from empirical evidence and several times the level predicted by the computer models on which policy makers have relied to date. The world has already suffered more ozone depletion than EPA predicted would occur under the Montreal agreement and EPA's proposed implementing regulations by the year 2050.

Public debate on the ozone issue has been startlingly transformed. We now face a global emergency requiring the complete phase-out of these chemicals on a rapid schedule. Each decade of delay in eliminating CFCs and halons altogether will result in an additional 1% ozone depletion, which in turn will cause an increase in skin cancers of approximately 4 percent. Indeed, EPA has calculated that merely to stabilize the amount of CFCs and halons reaching the upper atmosphere would require an immediate 85% reduction in emissions. Restoring damage that has already occurred requires even more dramatic reductions. Even then, recovery of the atmosphere will take a century or more. The damage to public health and the environment will continue for four generations or longer.

III. THE NEED FOR ADDITIONAL RESOURCES

A. EPA

The Administration's request of $3 million will barely suffice for the implementation of the Montreal Protocol and EPA's domestic regulatory program. The new scientific findings mean that EPA will also have to initiate several new resource-intensive tasks and undertake unexpected mid-course reevaluations of ongoing efforts during FY 89:

- The Agency will have to review the adequacy of the Montreal Protocol and its own regulation on stratospheric ozone protection on an expedited schedule. This effort will require an expensive new risk assessment with supporting analysis based on the new data.

- The Agency will have to devote unanticipated resources to developing and negotiating a new position for the accelerated revision of the Montreal Protocol, as recently demanded by Administrator Thomas;

- The Agency must consider developing new CFC phaseout regulations, as required by section 157 of the Clean Air Act, in response to the findings of unanticipated ozone depletion by the Ozone Trends Panel. This undertaking will require an in-depth analysis of technological mechanisms for speeding the total elimination of CFCs and halons;

- The Agency's promulgation and oversight of supplemental industry-specific regulations to reduce unnecessary releases of CFCs and halons must be substantially accelerated;

- The Agency's program to facilitate and support the development of substitutes for ozone depleting chemicals has acquired increased urgency, requiring additional funds and staff time;

- The Agency will have to devote additional resources to encouraging broad international participation and technology transfer by promoting ratification of the Montreal Protocol by foreign governments and by sponsoring trade fairs.

Mr. Chairman, it is now clear that in the area of stratospheric ozone depletion, EPA has set its sights too low for the coming fiscal year. The Administration's budget request would cover only an existing program which is plainly inadequate in light of recent developments. The items enumerated above are not luxuries, but necessities that must be undertaken in the next fiscal year. The Administration would devote minuscule resources to a problem which is plainly one of most pressing environmental issues of our time and for which delay will spell catastrophe.

For these reasons, NRDC strongly urges this Subcommittee to increase the Administration's request for EPA's stratospheric ozone abatement and control account by at least $10 million.

B. NASA and NSF

The recent avalanche of new scientific information about unexpected losses of stratospheric ozone has created an overwhelming need for undertaking additional unanticipated research on an expedited basis. This research will resolve remaining uncertainties and provide the necessary scientific basis for sound policy decisions. The following are urgent priorities:

- Flight missions to northern latitudes and the North Pole to investigate a suspected Arctic ozone hole;

- Investigation of the biological impacts of ozone loss in Antarctica and on the food chain of the southern hemisphere;

- Accelerated research on polar chemistry to determine the significance of the Antarctic ozone hole for the rest of the world;

- Establishment of a monitoring system for global ozone levels to provide an "early warning" of future depletion;

- Scientific analysis and computer modeling of empirical data; and

- Establishment of an ongoing effort for continuous scientific reevaluation of new data.

Mr. Chairman, insufficient funding of scientific research on this crucial issue will compel unacceptable tradeoffs. Essential flight missions to verify a suspected Arctic ozone hole over the North Pole alone could consume most of the resources the Administration would allocate for research on ozone depletion for FY 89. Both these missions and the other activities enumerated above are indispensable. Underfunding research in this area will create the necessity for impossible choices among highly compelling priorities, no one of which can afford to be compromised for any other.

For these reasons, NRDC urges this Subcommittee to increase the Administration's request by a total of $90 million for NASA's Earth Science and Applications Division's Earth Observation program and NSF's Bio- and Geosciences programs. This is money well spent to avert consequences that could be hundreds of times more costly to ourselves and to future generations.

STATEMENT OF THE ASSOCIATION OF STATE AND TERRITORIAL SOLID WASTE MANAGEMENT OFFICIALS

Mr. Chairman, Members of the Subcommittee, I am Bryan Dixon, Director of the Solid and Hazardous Waste Division of the Texas Water Commission. I currently serve as the president of the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) and am testifying today in that representative capacity.

ASTSWMO is a non-profit association which speaks for the directors of the State solid and hazardous waste regulatory and cleanup programs. These State waste management directors have a special perspective of these activities, for it is they who must coordinate the many complex federal regulatory programs for waste management with the health and environmental needs of the citizens of their States.

ASTSWMO's members provide the regulatory oversight for those who generate, handle, and dispose of hazardous wastes within their respective States, ensuring corrective action and compliance with both federal and State laws and regulations. I should point out that in many cases, the State laws are more strict than federal codes in order to meet a special local need or situation. In addition to the regulation of hazardous waste, State directors contribute funds, staff and other resources to clean up Superfund sites and other contaminated State sites which are not on the federal cleanup list. These same directors also regulate underground storage tank programs in many States. Additionally, our members have the primary role in regulating the non-hazardous waste programs within their States, an area of increasing importance as a number of the nation's regions run short of local disposal capacity.

Our members are experienced engineers, hydrologists, chemists, geologists and others with the many skills necessary to cope with the management challenges of today's enormous and varied waste flow. We work hard at finding safe, efficient solutions, and our work has convinced us that there is no single solution to the nation's waste problems. We join others in urging that together we develop an integrated waste management approach with sound, realistic goals to reduce waste before it is produced, to reuse and recycle what we can, to apply safe, regionally sound efforts at energy recovery and necessary incineration, and to deemphasize traditional landfills as the principal means of disposal and eventually reserve them for those items that cannot be safely disposed of in another way. We encourage research in treatment and innovative technologies to find alternative means of handling and disposing of wastes, especially those which are hazardous. While we will occasionally differ on technicalities with other professionals at the federal and local regulatory levels, with industry, and even with those involved in the advocacy of environmental causes, we all share a determination to achieve the goal of safe and effective management of the nation's solid waste.

STATE WASTE MANAGEMENT EXPECTATIONS

I would like to commend this committee for its continuing support of State waste management programs by providing funding which directly enhances our ability to deal with the growing volume of all forms of waste. We believe that development of State capabilities is the most effective way to approach this massive waste management situation, and that effective State and local programs are the most efficient way for the country to deal with the problem. The federal role of setting standards, providing effective oversight, and providing research, technical assistance and some resources is essential; however, we believe that implementation is best done as close to the citizens and industry as possible.

We believe this is the direction Congress has set for waste management through its insistence that States should be authorized to carry out the hazardous waste programs designated by RCRA and as amended by HSWA. That process is slower than many of us would prefer, but the statutory and regulatory guidelines are complex and difficult to accomplish. With EPA's support and assistance we believe more States can be authorized, thereby multiplying the number of human and material resources that can be applied to this national challenge. There is duplication of effort and an overlap of roles in a State where the program is being jointly administered by both the State and EPA, and we should not tolerate this condition indefinitely. Clearly, the State must be ready to assume the HSWA level of authorization, but that should not be measured against an abstract expectation of activity. Rather, the State's program should be compared with the realistic standard of the current capability of the regional USEPA office to carry out the HSWA levels of activity.

The authorization process should not become a game of legal fine points and semantics, but must be directly related to the protection of human health and the environment within a State. We strongly believe that most States are responsible managers of environmental programs. When States ask for flexibility they are not asking for less stringency in environmental results. States should be given program responsibility and then be willing to be held accountable to the Congress for their performance.

I should also note that it is our opinion that when States are authorized to carry out the provisions of HSWA, the resources formerly afforded the implementing regional offices of USEPA should be

transferred to the State which is carrying out the authorized program activities. The HSWA tasks, such as corrective action, are substantial and the elements actually performing those tasks should have access to the federal funding levels assigned. If States undertake that role, fairness would call for them to also receive the resources.

THE 1989 BUDGET PROPOSAL

Today I would ask your support of the Administration's EPA FY 1989 Budget proposal, particularly noting the importance of the grants to States in hazardous waste efforts. The hazardous waste financial assistance grants to States provide the opportunity for real State-federal partnership programs to develop. States negotiate their grant work programs with EPA to ensure that national priorities are supported, and assume responsibility for the completion of designated tasks to support those priorities. These funds make a significant difference in the ability of many States to marshal the resources necessary to deal with hazardous waste. Although I am not here to complain, I would note that these State grants took part of the across- the-board reductions of the FY 1988 budget cuts. EPA took the brunt elsewhere and the cut was a modest $1.1 million from a $66 million proposed level, but it will have an adverse impact on the total amount of work which can be accomplished this year. Many States traditionally overcommit themselves beyond the workload actually supported by the grants, so even a reduction at the margins is quickly felt. In FY 1989 we ask that you do what you can to sustain these State and local grants at the $66 million level requested.

There are some other important elements of the EPA budget which I would like to comment on. The emphasis you are giving to the underground storage tank programs is appreciated. The urgency EPA is placing on developing these as State operated programs is something you should support. It is a good example of a federal program developing in a way that properly distributes roles between the federal, State and local regulators. While my membership may not be of a single view on the funding levels involved in the UST program support, and certainly is concerned with the very slow release of dollars from the Leaking Underground Storage Tank Trust Fund, we are appreciative of USEPA's intention to make this a State operated activity.

I would also like to applaud EPA's increased emphasis on providing resources for the agency's non-hazardous solid waste program in the FY 1989 program. These resources are designed to improve the research and technical assistance available from the national level to these State and locally operated and regulated waste activities. We think this shows foresight and sound planning in helping States and local governments deal with the growing problems of disposing safely of our non-hazardous wastes. This is an important federal role in support of these State regulated programs.

I would also commend the Congress on its foresight in dedicating resources for waste related training and technology transfer over the last two program years. These initiatives are directed at the very valuable goal of building the training infrastructure at State and regional levels. This infrastructure, though still in its formative phases, is essential to meet the growing training and technical transfer needs of both the regulated community and State personnel who must deal with the waste problems of the future. We think that focus on regional and State training capabilities is right on target.

In closing, let me note that as an association, our waste management officials are aware of the severe constraints you are working under in developing an equitable and sound budget for the nation in FY 1989. Consequently, we have stopped short of the recommendations we should make for increased spending and larger programs, even though we do feel that the nation's welfare would be enhanced by greater investment in waste management. On the other hand, we do not believe that the current EPA budget levels for waste management allow room for reductions without significant, adverse consequences. Waste management is not a discretionary program. It is fundamental to the health and safety of our citizens and to the environmental quality of the nation. We urge your support for the levels of resources that the Environmental Protection Agency has requested for waste programs in FY 1989.

STATEMENT OF THE CONFEDERATED TRIBES OF THE COVILLE RESERVATION

On behalf of the Confederated Tribes of the Colville Reservation, I want to thank you for extending to us this opportunity to discuss the appropriations needs for delegated EPA media programs and development of tribally-operated environmental protection programs on Indian lands.

We want to focus our testimony on four issues of particular concern to the Colville Tribes and Indian Tribes generally relating to implementation of EPA's Indian Lands Policy and recent Congressional enactments directing the Administrator of EPA to treat Indian Tribes as States under the Clean Water Act, the Safe Drinking Water Act and CERCLA.

The first of those issues relates to the funding available to Indian Tribes. In the recent amendments to the Clean Water Act, Congress established specific set-asides of EPA funding for Indian Tribes. For example, under Title II of the Clean Water Act, one half of one per cent of all construction grants appropriations must be reserved for planning and construction of sewage treatment works to serve Indian Tribes. The percentage of the set-aside and the amount of money is inadequate given the current needs for sewage treatment facilities on Indian lands and the exclusion of Indian Tribes from the funding process over the last 15 years. While the established need is great, Indian reservation residents have failed to substantially benefit from money previously appropriated under the Clean Water Act which was provided to the States. See, EPA Report to Congress on Indian Waste Water Treatment Needs and Assistance, January 7, 1988, pages 1 and 2 (of $46 billion of Title II construction grant funds awarded through the state priority process since 1972, only $25 million has been awarded to reservation Indians).

Congress has also established a specific set-aside of one third of one per cent under Section 319 which covers non-point source programs including groundwater quality protection. Unfortunately, Congress failed to appropriate any funds for Section 319 for FY '88. Again, the one third of one percent is inadequate to address the need to develop and adopt non-point source protection programs for Indian lands. The problem for Indian Tribes is further exacerbated by EPA's determination not to allow Tribes to apply for Section 205j funding in 1988 even though it is available to States for non-point source pollution control. The only money available under the Clean Water Act to the Colville Tribes is Section 106 funding. In FY '88, only $913,000 is available to Indian Tribes nationwide with $148,717 of that allocated to the 39 Indian Tribes in Region 10. The funding situation regarding underground injection control and other programs under the Safe Drinking Water Act is the same. For example, under the UIC Program, only $575,000 is available to Indian Tribes nationwide. The Colville Confederated Tribes has submitted extensive comments to EPA on these issues and would be glad to make them available to the committee as a supplement to this testimony.

Three collateral issues also arise under the funding issue. Indian Tribes have largely been ignored while EPA and the States have developed their relationship and established the various delegated programs under the environmental statutes. Now, before an Indian Tribe is eligible for any funding, it must qualify as a State. Unfortunately, EPA does not anticipate making money available to non-primacy Tribes in the form of development grants in order to enable them to develop the level of sophistication that the States benefitted from as a result of the previous 20 years of direct funding from Congress and EPA.

Finally, even though the amount of money available is limited, EPA uses those funds to provide grants to other agencies to fulfill EPA's obligations to Indian Tribes under the various statutes. For example, EPA is funding the Council of Energy Resource Tribes to act as an administrative agency to then fund programs on Indian lands rather than fund Indian Tribes directly. Needless to say, the additional layer of bureaucracy and administrative costs diminishes the amount of money Indian Tribes are able to spend directly on their reservation programs. The Confederated Tribes urges Congress to increase the money available to Indian Tribes and that Tribes be funded directly. Furthermore, once a Tribe achieves State status, EPA should make all funding sources equally available to it in the same manner as it does for individual States.

A second major issue is EPA's failure to recognize and understand the unique nature of Indian Tribes and structure its Indian lands programs accordingly. EPA is organized by departments for each of the components of the environmental statutes. Because of that organizational structure, there is very little communication and coordination between the various departments organized under a particular environmental statute and even less coordination between specific media programs. Indian Tribes have neither the staff, nor the resources to develop separate organizational structures for each environmental statute and the corresponding programs within that statute. Therefore, the Colville Tribes has requested that EPA develop cross-media programs and to develop cross-media funding for comprehensive Indian lands programs utilizing funds available under the SDWA, CWA and RCRA to name a few. EPA has been reluctant to develop anything new and is simply attempting to plug Indian Tribes into the established State/EPA organizational process. As an example, Region 10 has decided to assign Washington Indian Tribes to the Washington operations office which has responsibility for the oversight of the EPA programs delegated to Washington State. EPA's Washington Operations Office is not capable of working effectively with Tribes because the office is focused on dealing with State personnel and programs. EPA either needs to develop a corresponding Indian operations office or strengthen the Indian coordinator position to act as the liaison between Indian Tribes and the EPA programs to enable Indian Tribes to work directly with program staff. The Colville Tribes urges the Committee to direct EPA to develop cross-media programs and develop a uniquely Tribal process rather than incorporate Tribes into the State process.

Finally, because of the remoteness of the many Indian reservations, the environmental problems facing Indian Tribes do not rise to the level of magnitude faced by EPA in the larger metropolitan areas. For that reason, and because of the lack of adequate funding for all EPA responsibilities, EPA's priorities for Indian lands is diminished. The agency needs to balance its priorities as to the necessity of a particular response (for example a small hazardous waste spill) to take into account the status of Indian reservations as the Tribes' homeland. The Colville Tribes, for one, has developed effective regulatory programs and is attempting to respond to environmental problems before they rise to the level of emergency situations that are documented daily nationwide. Indian Tribes need Congress' help and leadership in modifying the balance of EPA's priorities for response.

The third area of concern is EPA's implementation (or lack thereof) of its Indian Lands Policy. Many of the regulations currently being proposed by EPA are structured to prevent Indian Tribes from reaching eligibility. Again, we would refer you to

the voluminous comments the Confederated Tribes has submitted to EPA over the last year. The Colville Tribes asks the Committee to conduct hearings on EPA's implementation of the Indian Lands Policy because we believe EPA is misinterpreting Congress' intent when it adopted the Indian amendments to the Clean Water Act, Safe Drinking Water Act and CERCLA.

EPA apparently does not have the money or the manpower to implement its Indian Lands Policy. An example of the problem can be seen by examining the Colville Tribes' experience regarding NPDES permitting on the Colville Reservation. In March, 1986 the Confederated Tribes and EPA Region 10 entered into a comprehensive agreement which included a provision that EPA would assume all NPDES permitting for all facilities within the exterior boundaries of the Colville Reservation. When the Colville Tribes insisted that EPA uphold its commitment with regard to an application to renew an expired permit, and the EPA instructed the State of Washington to transfer the application to EPA, the State threatened to dump all pending NPDES applications on all reservations within Washington on EPA. Since EPA Region 10 only averages one major permit per year, the threat generated much concern within the Agency. The permit which was written by the State for the facility on the Colville Reservation violates the Clean Water Act. Although EPA began processing the application, the permit has been at a standstill for over one year because EPA determined that it would need to federally promulgate the Colville Tribes' water quality standards before being able to issue a permit. Unfortunately, while promulgation of the Tribes' water quality standards as federal standards was also a component of the Tribal/EPA agreement, that process is now in its third year of review since the Tribes' initial submission and request on February 4, 1986. While Region 10 has been supportive of the Tribes' request and moved rapidly, sending a recommendation to headquarters to promulgate the Tribes' standards on March 13, 1986, the request has languished within the EPA headquarters bureaucracy for over two years. Whether the standards will ever be promulgated and whether the federally-issued permit will be issued remains to be seen. Meanwhile, the operator continues to violate federal law. Indian Tribes have had similar experiences with EPA RCRA enforcement and inspection on Indian lands. Not only do Indian Tribes need more money to effectively fulfill their role within the federal/state/Tribal scheme comtemplated by the recent Indian amendments, EPA must also receive more appropriations in order to effectively and responsibly operate programs on Indian lands when a particular Tribe has not received primacy and EPA retains jurisdiction. As the situation now stands, EPA has acquiesced by default to state regulatory action and control on Indian lands even though they take the position legally that a State has no such authority. See, Washington v. EPA, 752 F.2d 1465 (9th Cir. 1985).

A final area of concern requiring Congressional action and intervention is EPA's failure in conjunction with the other federal agencies to fulfill its trust obligation to the Indian people. BIA, IHS, and EPA all have varying responsibilities related to protecting reservation resources and the reservation environment. EPA has had difficulty to date in working with IHS and BIA. Again, cross-media programs and mandatory coordination with the Tribes would be most helpful.

In a communication dated February 29, 1988 from the Deputy to the Assistant Secretary of Indian Affairs for trust and economic development to the Confederated Tribes, it was stated that the Department of Interior has deferred to EPA in the development of federal Indian environmental law and policy. Since 1980, the Department of Interior has taken the position and continues to take the position that EPA is the lead federal

agency for the establishment of federal Indian policy regarding the administration and implementation of federal environmental programs in Indian Country. BIA cannot abrogate its responsibility for such program development and should be directed to work more closely with EPA. While IHS has not abrogated its responsibility regarding environmental health matters, it has found it difficult, if not impossible, to work with the EPA in developing environmental health protection programs for Indian lands.

The Confederated Tribes urges the Committee to conduct hearings to explore not just EPA's efforts in fulfilling Congress' intent to provide Tribal administration of environmental programs on Indian lands, but also how the BIA, EPA and IHS can better coordinate activities and work with Indian Tribes to develop a positive, healthy environmental protection program on Indian reservations for the benefit of all reservation residents.

Mr. Chairman, we thank you again for your continued support and concern for Indian people. We will assist you in any way you deem appropriate as you deliberate upon our request.

STATEMENT OF MAUREEN O'CONNOR, MAYOR, SAN DIEGO, CALIF.

Mr. Chairman and members of this Subcommittee, thank you for the opportunity to testify before you today. I am here to ask that you appropriate funds in Fiscal Year 1989 for construction of a project which is a solution to the Tijuana sewage problem.

This Subcommittee has been very helpful to the City of San Diego over the past four years and I appreciate your continuing interest in the international sewage treatment problem along the border between Tijuana, Mexico and the City of San Diego. I am here today because we continue to need your help to prevent continued pollution of the Tijuana River Valley and Estuary and beaches of California. It is calculated that today the average daily flow of raw sewage through the Tijuana River and the federally protected saltwater estuary is eight million gallons. The increase in sewage flows is the result of that city's population increase and of the government of Mexico's decision to expand the water distribution system in Tijuana. This is an increase of 800 percent from 1983 when Congress first authorized funding for treatment works to address the problem. Until 1985, the raw sewage flow in the Tijuana River was 1 million gallons a day on a bad day. Recently, flows continued at 12 million gallons a day for over a month! In addition to this daily flow, there are frequent breakdowns in the Mexican sewage works resulting in flows of raw sewage into the United States. Tijuana's sewage treatment plant suffered structural failure in late October, 1987; for four months, 20 million gallons a day of raw sewage was discharged directly into the ocean 5.6 miles south of the U.S./Mexico boundary. On February 2, 1988, the pipeline carrying sewage to Tijuana's treatment plant was damaged and 20 million gallons were discharged into the United States over a 24 hour period. It is clear that the problem is worsening at an alarming rate.

In August of 1986, $5 million was released by the Office of Management and Budget to the Environmental Protection Agency to begin the planning and design of a defensive system to protect the health and environment of the Tijuana River Valley and the San Diego metropolitan area. The work done with these funds has resulted in a project which has been termed the "Big Pipe". Actually, there are 2 designs being prepared for this project, both having identical flow capacities: 100 million gallons a day average daily flow for Tijuana and 240 million gallons a day average daily flow for San Diego. Today I am requesting an appropriation for the construction of this pipeline system which will have the capacity to not only capture the entire Tijuana sewage load and convey it back to Mexico, but also be a part of the City of San Diego's treatment and reclamation program. The City will pay approximately $300,000 for the cost of the design work and its share of the construction cost for that portion of the pipeline system associated with capacity for San Diego's sewage.

The defensive pipeline will enable the federal, state and City governments to address several sewage treatment problems in combination. The precise size and configuration of the pipeline system will be determined by design engineers based upon economy and the need for operational flexibility. At this time, that determination has not been made. The San Diego City Council and I, however, are on record as supporting a system, whatever the configuration may be, that provides a total capacity of 340 million gallons a day average daily flow.

The San Diego City Council made a decision some time ago that secondary treatment will be the standard for the City's wastewater. We expect to finish our secondary treatment plan by 1991 and select sites for the wastewater treatment and water reclamation facilities which will have been identified by the public participation planning process. At that time, we feel that this pipeline system will be compatible with the various options that will be identified for configuring a secondary system. One of the factors that will enable us to make water reclamation a reality in our water deficient area is the possibility of an ocean outfall in the Tijuana River Valley. The big pipe capacity project allows for a land portion of that outfall to be constructed now.

The City of San Diego is requesting an appropriation in Fiscal Year 1989 for construction of the border sewage pipeline project. Plans for the system will be complete by mid-May, and construction can begin as soon as federal funds have been appropriated.

Again, thank you for your interest in this problem and for the opportunity to make this appearance. If you have any questions, I will try to answer them.

LETTER FROM BETH A. WESSEL, PROJECTS MANAGER, ASSOCIATION OF BOARDS OF CERTIFICATION

June 28, 1988

Honorable William Proxmine
Dirksen 530
Washington, DC 20515

Dear Senator Proxmine:

As requested, enclosed is a more detailed break down of the budget for the "Model Environmental Personnel Certification Program for Reciprocity" testimony which you received in May.

Feel free to contact me if you have any questions.

Sincerely yours,

Beth A. Wessel

Beth A. Wessel
Projects Manager

1. Solid Waste	
• Personnel	74,569
• Travel	65,100
• Equipment	10,400
• Supplies	4,800
• Contractual	70,125
• Other	3,006
Total for Solid Waste	**228,000**
2. Hazardous Waste	
• Personnel	129,615
• Travel	108,500
• Equipment	12,000
• Supplies	8,000
• Contractual	116,875
• Other	5,010
Total for Hazardous Waste	**380,000**
3. Cross-Connection Control	
• Personnel	46,246
• Travel	43,400
• Equipment	10,400
• Supplies	3,200
• Contractual	46,750
• Other	2,004
Total for Cross-Connection Control	**152,000**

4. Inspectors	
- Personnel	74,569
- Travel	65,100
- Equipment	10,400
- Supplies	4,800
- Contractual	70,125
- Other	3,006
Total for Inspectors	**228,000**
5. Asbestos	
- Personnel	129,615
- Travel	108,500
- Equipment	12,000
- Supplies	8,000
- Contractual	116,875
- Other	5,010
Total for Asbestos	**380,000**
Total Cost	**1,368,000**

INTRODUCTION OF PANEL

Senator GRASSLEY. Our next panel will present testimony on the Department of Housing and Urban Development's budget request. The witnesses will be Paul Iron Cloud, Rick Mitchell, Michael Allen, and Daniel Darden. Each of these witnesses will speak on Indian housing. We will begin with Mr. Iron Cloud, who represents the Oglaia Sioux Tribe.

We are pleased to hear from you, Mr. Iron Cloud. Maybe could you wait just a minute until we get everybody settled. Did I announce somebody who didn't come and you are taking somebody's place; is that right?

Mr. ALLEN. He is the director.

Senator GRASSLEY. I have down four people: Rick Mitchell, Michael Allen, Daniel Darden, and Paul Iron Cloud.

Mr. IRON CLOUD. Paul Iron Cloud right here.

Senator GRASSLEY. Somebody is not here.

Mr. ALLEN. Michael is not here. He asked me to present testimony for him.

Senator GRASSLEY. Thank you. Would you proceed.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

STATEMENT OF PAUL IRON CLOUD, OGLALA SIOUX TRIBE

INDIAN HOUSING ISSUES

Mr. IRON CLOUD. Mr. Chairman, members of the subcommittee, I am Paul Iron Cloud, president of the Oglala Sioux Tribe. On behalf of the Oglala Sioux Tribe, thank you for the opportunity to testify on Indian housing appropriations issues.

There is a huge unmet need for modernization, for construction of housing on the Pine Ridge Reservation and throughout Indian country. There is also a need for HUD regulations to be written in such a way that they can accommodate the differences between urban and rural areas of the country.

Finally, HUD must allow for conversion of all electric housing units to alternative forms of energy, and they must be conscientious of energy efficiency when constructing new housing.

The Oglala Sioux Housing Authority is the first Indian housing authority in the United States, established by the tribal council in 1961. The housing authority now manages 1,200 units, over 40 percent of the available housing on the reservation.

FIVE-YEAR WAITING LIST

We also have a waiting list of over 1,000 applicants. There are, in addition, many families who never bother to apply for HUD housing because of a 5-year waiting list. As a result, we have situations where 17 people live in a four-bedroom house and other situations where four families live in a small log cabin with the only relief from crowding coming during the summer, when some people sleep outside.

There are only 100 units of housing available for rent on the Pine Ridge Reservation. Other existing housing is HUD housing for which there is a long waiting list, the Bureau of Indian Affairs, Indian Health Service, and school housing, which is used strictly for employees of the organization.

Because the first HUD units built on the Pine Ridge Reservation are 25 years ago old, they are naturally in need of major repair. The maintenance dollars provided through the HUD program do provide band-aid-type repairs such as fixing broken doors, windows, and making minor plumbing repairs.

However, needed major repairs, such as installation of new pipes, it is now possible under the available funds. In addition, some of the units need to be converted to more efficient and less expensive forms of heating.

In light of the above-mentioned conditions, the Oglala Sioux Tribe makes the following recommendations. At least 5,000 units of Indian housing must be constructed annually so that we can start meeting the backlog of unmet needs. The Pine Ridge Reservation has a list of over 1,000 eligible applicants.

According to BIA, 53,000 Indian families need new homes. There needs to be increased appropriations for modernization and repair of existing HUD units. As HUD units are aging, the types of repairs required are more extensive. The BIA estimates that nearly 40,000 HUD units in Indian country need renovation.

LOSS OF RECAPTURED FUNDS

If these repairs are met, the lives of the housing units can be extended by many years. The Appropriation Committee should, as you have done in the past 2 years, require that any funding for Indian housing units which are recaptured be reallocated to other Indian housing authorities.

Prior to fiscal year 1987, the funding for units which could not be built reverted to the U.S. Treasury. We object, however, to the fiscal year 1988 policy which deducts the number of recaptured units from the number of units to be constructed.

For instance, in fiscal year 1988, 2,000 of HUD Indian housing——

Senator PROXMIRE. Mr. Iron Cloud, your time is up. Could you wind up in about a minute or so?

Mr. IRON CLOUD. I guess I do have written testimony here.

Senator PROXMIRE. We will be happy to print it in full in the record.

Mr. IRON CLOUD. OK.

Senator PROXMIRE. Thank you very much, sir.

[The statement follows:]

STATEMENT OF PAUL IRON CLOUD, PRESIDENT, OGLALA SIOUX TRIBE

Mr. Chairman and Members of the Subcommittee, I am Paul Iron Cloud, President of the Oglala Sioux Tribe. On behalf of the Tribe, I thank you for the opportunity to testify on Indian housing appropriations issues.

Our basic recommendations are: (1) at least 5,000 units of Indian housing be constructed each year so that we can begin to address the unmet need of housing in Indian country; (2) modernization funds be increased to more nearly meet housing needs in Indian country; (3) that HUD regulations more clearly reflect the differences between urban and rural areas (especially Indian reservations); (4) that the Solar Bank Program be reauthorized and allocated appropriations; and (5) that new HUD housing be required to have energy evaluations and that solar energy be considered as either a primary or secondary source of energy.

BACKGROUND OF THE OGLALA SIOUX HOUSING AUTHORITY

The Oglala Sioux Housing Authority is the first Indian Housing Authority in the United States. Established by the Tribal Council in 1961, Project SD1-1 was commenced and built on the Pine Ridge Indian Reservation for some of our low income residents. Since this first house was occupied, we have built projects under the low rent programs of HUD, the Old Mutual Help Program, and the New Mutual Help Program. We now have more than 1,200 units under management, making the Oglala Sioux Housing Authority one of the largest housing authorities in Indian country.

With our background of more than 25 years of planning, constructing, repairing, modernizing and managing these units under the various HUD programs, we have a great deal of knowledge of the programmatic changes which have occurred and of the problems in the Indian housing program.

The Housing Authority currently provides the primary shelter for approximately 8,000 residents and constitutes nearly 40 per cent of the total available housing on the Reservation. The need for quality housing is still in short supply, and we currently have a waiting list of well over 1,200 applicants waiting for a vacant house. We have as many as 17 people residing in a four-bedroom house due to lack of adequate housing.

CURRENT INDIAN HOUSING IS CRIPPLED BY POOR HUD REGULATIONS

The "regular" HUD program is designed with the city as a backdrop. Many of the HUD regulations are written with the unstated assumption that the HUD participants are living in an urban area. The regulations are designed with these urban resources in mind even though there are key differences between urban areas and Indian country the result being regulations which are often inappropriate for our situation.

An example of a regulations which may work in an urban area but not on an Indian reservation is the HUD regulation which sets a goal of 95% population of "very low income" families, with 5% remaining for "low income" families. Another HUD regulation (24 CFR 960.210), however, forbids the eviction of a tenant from subsidized housing unless alternative housing at a reasonable rate can be found. This regulation makes sense in an urban setting. If a family in an urban setting becomes employed and the income level increases, it is logical to require them to go to the private housing market. But in a rural area such as is found on most Indian reservations, there is little or no private housing market. The Housing Authority cannot meet its statutory requirements of 95% very low income and 5% low income, nor are they allowed to evict tenants based solely on their income because of lack of housing.

Of the housing on the Pine Ridge Indian Reservation not under the jurisdiction of the Housing Authority, approximately 25% is owned by government programs with limited access for more Reservation residents. These homes are owned by the Bureau of Indian Affairs for its employees, by the Indian Health Services for its employees, and by schools and school systems for their employees. Of the total dwelling units on the Reservation, there are less than one hundred privately-owned dwellings which are available for rent and which are suitable for family living.

CRITICAL FUNDING FOR DEVELOPMENT LOST BY HUD REGULATIONS

The Oglala Sioux Housing Authority currently has on file more than 1,000 eligible applicants for HUD housing. We have no units for these 1,000 families. Despite this very clear and critical need for housing, the Housing Authority has not received an allocation for housing since 1979. It is unreasonable that the Oglala Sioux Tribe, with its enormous housing need, would go nearly ten years without an allocation for additional housing. During most of this time, the Department of Housing and Urban Development was "recapturing" funds from Indian housing authorities and reprogramming the monies to the U.S. Treasury.

The most frustrating aspect of this "recapturing" policy is that a major reason that funds were "recaptured" was that the Indian housing authorities, due to their rural locations, frequently had to obtain waivers of HUD regulations which had been drafted for urban areas. This process of waiver requests, appeals from denials, hearings on waivers and other "red tape" frequently took so long that the Indian housing authorities were unable to meet the time-frames for developing a project.

Another reason it takes a long time to complete construction of Indian housing is that we have to work with three federal agencies and get all of them to coordinate and agree among themselves on a project. We work with HUD on construction, while the Bureau of Indian Affairs builds roads, and the Indian Health Service provides water and sewer facilities associated with the housing project. These agencies' planning and development cycles differ, creating long delays in the completion of a housing project. Funds for projects are taken by HUD, and the Indian Housing Authority is then unjustly chastised for its alleged poor development practices.

The Appropriations Committee should require, as you have done in the past two years, that the funds set aside for Indian housing must be used for Indian housing and may not be recaptured and returned to the Treasury. Every dollar appropriated for Indian housing is critically needed, and these funds should not be lost due to the bureaucratic foot-dragging of the federal government.

In addition, funding for recaptured housing units should not be deducted from the appropriations for housing construction, i.e., in FY 1988, 236 units of Indian housing were recaptured and a like number was deducted from the 2,000 units to be constructed that year. Instead of 2,000 units being constructed with FY 1988 monies, 1,764 units were built. The funding for the 236 recaptured units is from appropriations made prior to FY 1988. Thus, we believe that 2,236 unis should have been constructed in FY 1988.

INCREASED APPROPRIATIONS NEEDED FOR DEVELOPMENT

The Oglala Sioux Housing Authority has an active file of more than 1,000 applications from qualified and eligible families who seek admission to the Housing Authority program. Since there are very few vacant houses, it is clear that there is a large unmet need for Indian housing. In addition, many families are eligible for HUD housing but do not bother to apply because the waiting list stretches over five years.

This situation is repeated throughout Indian County. There are not enough safe, sanitary or decent homes available on the private market on reservations. Many families are forced to crowd into insanitary and unsafe homes. At Pine Ridge it is not uncommon for three families of more than 12 people to be living in a small log house with no running water and tents for the children scattered about in the summer.

Increased appropriations are essential so that we can begin to meet the housing need. At a minimum, 5,000 units of additional housing each year must be approved by Congress. The current allocation of 2,000 units does not even keep up with the population growth and certainly does not make any inroads into the growing housing shortage.

NEED FOR REHABILITATION FUNDS

The first Oglala Sioux Housing Authority projects are now nearing their 25th anniversary. As can be expected, these projects are in need of modernization in order to meet the current standards. Pipes are corroding, insulation is more important than in the early 1960s when there was cheap gas and electricity. The houses are simply wearing out due to the fact that they are near the end of their life expectancy.

The maintenance dollars received as part of the operating subsidy cannot begin to address this cost. The maintenance dollars can provide the "band aid" type of repairs of broken doors, windows, holes in walls, and minor plumbing repairs. However, the removal of all pipes due to deposit build-up and loss of water pressure is not possible under the funds available. Additional funds must be set aside under the CIAP program to modernize these homes and extend their life by another 25 years.

FUNDS NEEDED TO CONVERT TO PROPANE OR ALTERNATIVE HEAT

One of the most important needs on the Pine Ridge Reservation is to convert over 100 HUD houses from all-electric heat to propane or alternative heat. It is incredible that HUD even approved building homes in South Dakota with all-electric heat. Every winter, electric power has shown itself to be unreliable and, of course, very expensive. This last winter, electrical power was lost for varying periods of time, extending from hours, to days. A late winter blizzard this past March knocked out power lines throughout the Reservation. The power was out from Thursday evening until Sunday afternoon. When the power went out, the heat for our tenants also disappeared. With propane heat, the tenants lives and health would not be endangered by the loss of electric power. Propane is readily available and has shown itself to be reliable and economical.

Conversion from the all-electric units would also save the Housing Authority thousands of dollars of operating subsidy currently used to pay utility allowances for our low-rent tenants. Some of the bills for the all-electric units are running in excess of $400 per month. The cost of electricity on the Reservation is high and there appears to be no relief in sight in terms of the cost of electricity.

While there would be a cost to convert the units to propane, the pay back time would be less than five years. When you couple this cost-saving with the safety factor, it only makes sense to convert from electricity to propane. Several lives have already been lost when the electricity went out and there is no reason to add to this total.

SOLAR BANK PROGRAM

The Oglala Sioux Tribe is a participant in the Solar Bank Program, and is dismayed that at the last minute the conferees for the Housing and Community Development Act of 1987 (now P.L. 100-242) dropped the authorization for the Solar Bank Program. The bill, as passed by the House and Senate, provided for one- and two-year extensions of the program, respectively. While we know that we must go through authorizing committees to get this program reauthorized, we do want the Appropriations Committee to be aware of its value and to urge you to appropriate money for the program should it be reauthorized as part of housing legislation which will be considered by Congress this year and next. If it is possible to appropriate money for the purposes now served by the Solar Bank without a specific authorization, we urge you to do so. The FY 1988 appropriation for the Solar Bank was $1.5 million, which is certainly an inadequate amount considering the long-term value of the program.

The Solar Bank Program, a low-interest loan and matching grant program, provides funding for energy evaluation and installation of solar systems. The Oglala Sioux Tribe intends to use as FY 1988 matching funds for the Solar Bank Program the Exxon oil overcharge restitution money owed to the Tribe.

The Oglala Sioux Tribe has conducted an energy audit of housing on the Reservation, utilizing four tribal staff members who are certified as energy auditors. The Solar Bank funds allowed us to obtain a soft wear program which utilizes our energy audit information and does cost analyses for improving the energy efficiency of houses. The soft wear program prioritizes needed changes and can tell us what we can do with a particular house with varying amount of money, i.e., $500, $1,200, etc. Through out-reach we are able to determine which houses can utilize the Solar Bank program effectively and which ones need services that the weatherization and BIA Housing Improvement Program cannot provide.

There are thousands of houses in Indian Country that were built by HUD with inefficient and expensive electric heating. As noted above, over 100 of these houses were built at Pine Ridge. The Solar Bank Program is an avenue for tribal government to leverage other money so that low-income members can have their utility bills lowered through conservation, and in come cases, conversion of utility systems.

We also ask that Congress direct that any newly constructed HUD housing include an energy evaluation and that the use of passive solar design be incorporated as either the primary or secondary heating source. The Solar Bank Program could help fund the small increase in initial costs which results from installation of solar systems. Savings in terms of utility bills would far out-weigh the initial outlay for passive solar design.

CONCLUSION

In conclusion, the Indian Housing Authorities have done a good job with the funds appropriated for them. The need for additional modernization funds for Indian housing is critical if the current homes are not to be lost to the ravages of time. The current funding level for new development should be increased to provide at least 5,000 units per year. We can begin to address the unmet housing need at Pine Ridge and in Indian Country. We also ask that Congress increase its commitment to energy conservation by reinstating the Solar Bank Program.

STATEMENT OF RICK MITCHELL, PENOBSCOT INDIAN NATION

PREPARED STATEMENT

Senator **Proxmire**. Our next witness is Rick Mitchell of the Penobscot Indian Nation.

Mr. Mitchell?

Mr. **Darden**. Senator Proxmire, Rick Mitchell couldn't be here today, but we have brought the testimony, and it is for the record.

Senator **Proxmire**. Very good. All right. That will be printed in full in the record.

[The statement follows:]

STATEMENT OF RICHARD H. MITCHELL, EXECUTIVE DIRECTOR, PENOBSCOT TRIBAL RESERVATION HOUSING AUTHORITY

Mr. Chairman and members of the Appropriations Subcommittee for HUD Independent Agencies, my name is Richard H. Mitchell and I am the Executive Director of the Penobscot Tribal Reservation Housing Authority. I would like to express my appreciation for this opportunity to respond to the housing needs that we have today in Indian Country.

There exists, in Indian Country today, an urgent need for housing that is not being met. Each year we come before you to request these much needed housing units and while appropriations are made they do not meet the needs that truly exist. The latest statistics from the Bureau of Indian Affairs Consolidated Housing Inventory supports this fact. According to those figures, it is shown that more than 92,000 Indian families are in dire need of housing and another 40,000 are in need of housing rehabilitation. While the Bureau of Indian Affairs provides funds under it's Housing Improvement Program to rehabilitate some of the dwelling units it does not provide for the construction of new housing units. This need, then, falls squarely on the shoulders of HUD and it is with this thought in mind that I implore you to take a hard look at the recommendations that are being made here today.

In reviewing HUD Secretary Pierces' testimony before the House Committee on Appropriations I am appalled to read that he is proposing to cut the Indian Housing allocation by 50% while at the same time stating the his budget '...continues our steady increase of housing assistance to those in need...'. Well, clearly, one thing that needs to be made absolutely clear is that Indians on reservations are very much in need of housing assistance and for some reason the powers that be seem to forget or don't want to admit that we are in need as well. It is truly a miscarriage of justice when we, as Indians, have to deal with the fact that while housing became available for other ethnic groups with passage of the Housing Act of 1937 we did not get any consideration as people in need until 1961. To this day, we are still trying to get the point across that we are in need and that our needs won't go away with stroke of a pen.

Realistically speaking, we here in Indian Country should receive at least 6,000 units annually so that we can address our housing needs and provide a more suitable housing base for our people. The HUD recommended level of 1,000 units is just not realistic or adequate. I find the HUD statement that they will 'support 4.4 million families in 1989 as opposed to 4.3. million last year ' to very troublesome when it is noted that HUD is recommending a 50% cut in the Indian Housing allocation while support is obviously increasing for others. Also, Secretary Pierce's remark that '...this steady growth of assistance to low income families demonstrates that compassion is compatible with responsible governance...' is contradictory when you view the cuts proposed for Indian Housing and most assuredly does not indicate any compassion from a responsible governance.

It is vitally essential that we maintain our reservation base and cultural identity and it becomes an impossibility without an adequate housing stock. The only means for providing housing on reservations is through HUD, as the trust status of these areas does not allow us the same flexibility that non-indians enjoy. In some areas, conventional mortgages have been attempted but without much success due to the high mortgage rates that an Indian family would have to pay to enjoy the privilege of buying their own home.

When I read a statement from Secretary Pierce that says '...the primary housing problem of low-income families ...Nationwide... is affordability, not availability, of decent housing...' I know that he is not referring to Indian Reservations. On reservations the issue is both affordability and availability. At the rate that we are going we are having a very difficult time trying to establish a suitable housing base for our present needs. We now face overcrowded and substandard housing conditions throughout Indian Country. These conditions contribute greatly to the creation of social, family and health problems among reservation Indians.

Another area of concern is HUD's recommendation that UDAG not be funded this year. UDAG has been a very beneficial program for Indian Tribes throughout the country. It has enabled tribes to establish an economic base and provide employment opportunities for tribal members that otherwise would not have been there. This employment has returned lost pride to a lot of our people and the mere fact that we may lose a vehicle that can provide start-up assistance for our economic endeavors is troubling. Utilizing the assistance provided by UDAG, we have been able to construct a factory and an expansion that produces 1,000,000 cassettes tapes per week and will employ 250 people by the end of this summer. It goes without saying that none of this would have been possible without the funds provided through UDAG. Therefore, we would strongly like to recommend that UDAG be funded at the level that it received last year.

The regulations that currently govern the CDBG program are in need of revamping. The scoring system now in place, for this program, favors larger tribes and doe not allow smaller tribes to compete for funds on an equal basis. If we are to see the end of UDAG, small tribes cannot hope to compete for funds with larger tribes and as such will be without any real hope of improving their lot.

In conclusion, we would like to indicate our total support of all the Indian Health Care funds as they are sorely needed in Indian Country.

With the increasing Indian population, it is now more imperative then ever that the housing needs that we have in Indian Country be addressed in a sincere manner.

On behalf of the Governor and Tribal Council of the Penobscot Indian Nation I would like to thank for this time and urge that you grant the recommendations that we have put forth here today.

STATEMENT OF DANIEL DARDEN, CHITIMACHA TRIBE OF LOUISIANA

Senator PROXMIRE. Then our next witness is Daniel Darden.

Mr. DARDEN. That is me.

Senator PROXMIRE. Very good.

Mr. DARDEN. It is a pleasure to be here before you today. I can tell my grandchildren that I had appeared before you. We are a little unknown reservation down in Louisiana, located approximately 80 miles west of New Orleans. We are approximately 300 strong on our little reservation with 300 more in the New Orleans area. We have been federally recognized since forever and ever. We have records dating back with the Spanish and the French occupation back to 1699.

You might ask how did we survive all of this? Well, we lived out in the swamps and the Achafalaya basin all these years. We have learned to survive. We, at the end of the Spanish occupation, were left with six women. Today, we are coming up on 600 tribal members. I think this is astonishing, starting from such a poor start.

NEED FOR 34 HOUSING UNITS

We are in bad need of 34 housing units. We are a small reservation, and we are still living in some of the huts that were built, the trapping huts that were built during those years. They have been repaired many times. We also need nine units for our single people. We have 42 elderly families living on the reservation that have not, in the past, been able to get homes repaired by any means. So we are asking that of you today.

I am of the opinion that we are asking such a small amount for our tribe that I can't believe that $1 billion is even enough for the rest of the tribes to go around. I believe the amount of money is not enough.

Even with my small tribe, I have a need for this many units with only 300 people on my reservation.

We are, in Louisiana, of course, in an oil crunch. The state of Louisiana is 12-percent unemployed. My reservation is 42-percent unemployed. We are doing something about this, however. We are trying, at this very moment, to get our bingo hall going, which will be in July. We also have a small restaurant that we are opening up. We have a store that opened up several years ago. We are taking in over $700,000 a year.

We have employed about 10 people with about three or four part-time employees. With the coming of the bingo and the restaurant, we will be one of the old boys. We will run out of Indians, and we will be able to hire local people in our area. I am looking forward to that, being called one of the boys.

I think this will take place within the next 2 or 3 years; possibly less, hopefully. Of course, we are already building 20 houses out there now, and people are beginning to look at us, "Hey, those Indians are not so bad after all, out there."

It is going to really be nice to be called one of the old boys. I thank you for listening to me today, and I appreciate it.

Senator PROXMIRE. Thank you, sir, very, very much.

[The statement follows:]

STATEMENT OF DANIEL DARDEN, CHAIRMAN, CHITIMACHA TRIBAL COUNCIL

Mr. Chairman, members of the Committee, I am Dan Darden, Chairman of the Chitimacha Tribe, located in southern Louisiana, eighty miles west of New Orleans. Our tribal members number 600 strong with a land base of 300 acres.

We are the only federally recognized tribe native to the state of Louisiana. We've been under Spanish or French rule documented back to 1699 and then through the Louisiana Purchase in 1803 the United States. In all this time our Tribal homeland has remained at its exact location as it is today, at the edge of the great Atachalfia Swamp Basin in southwest Louisiana. The French under de 'iberville declared War on the Chitimacha Nation after 11 years reduced the tribe from a number of 3000 to 6 old women only then did peace come to the Chitimacha tribe. Today we have a tribal enrollment of 600 members strong.

You may ask how did we weather this. By making our living off the land in the marshes and swamps and by living in the housing handed down from generation to generation. Today those wood frame structures are no longer adequate. We need 34 single units for family occupancy and 9 units for single persons. We also have many Indians living off tribal lands because we have no housing on our reservation, a rough guess at that number would be maybe 35 families; that's not much to ask for out of 1000 members. In addition, we have 42 elderly families that are living in run down homes that are all in need of complete remodeling from top to bottom, each house would require about $20,000.00 to bring up to standard. My own mother and father are in a home where you can see through the bathroom floor; they had no money to repair it so I built them a new one so they would not have to move out for two weeks while theirs was being repaired. In time I must repair the old one where the water comes through the ceiling at times plus the numerous other problems that come with an old frame house.

I support HUD Secretary Pierce's request for one billion dollars for modernizing public and Indian housing. I ask for the speedy approval by Congress of a method for allocating these funds to local agencies. I hope the Chitimacha Tribe will be one of the beneficiaries of these much needed modernization monies.

The BIA Consolidated Housing Inventory shows that 92,970 Indian families are in need of assistance. Over 53,000 need new homes, about 40,000 need their homes renovated.

Since 1980 the Indian population has increased by 23% but the Administration has only requested 1,000 units to assist Indian families plus a proposed recission on any recaptured units. Indian Country need at least 6,000 units of new construction to meet the existing need for new Indian homes for lower income families for ten years.

Many of our families who choose to stay on the reservation double up or triple up resulting in worsening health conditions, over crowding and the breaking up of families. Many members of the Chitimacha Tribe have left the reservation to seek refuge in trailers on the outskirts of New Orleans.

The Chitimacha Tribal Council is making great efforts to improve living conditions on our reservation. Job opportunities, education, health and housing are all vitally needed and we are making progress. We are in the process of trying to open a restaurant that would employ 6 to 8 Indians plus a fur business that could employ in exess of 75 of our Indians which means I'll run out of Indians; then we begin to be one of the boys, begin hiring other unemployed folks in the area.

Our state has lead the nation in unemployment for the past 3 years and at present the unemployment rate is about 12% while while the reservation has about a 42% unemployment rate. It is the Chitimacha Tribal Council's goal to provide jobs and improve our standard of living to that of today's world, we can no longer live in past occupations; we can no longer live in past handed down trappers huts; we must modernize.

I appreciate the opportunity to testify before the Committee today and look forward to working with you.

STATEMENT OF MICHAEL W. ALLEN, LAC DU FLAMBEAU BANK OF LAKE SUPERIOR CHIPPEWA INDIANS

Senator PROXMIRE. Is Michael Allen here by any chance?

Mr. ALLEN. Right here.

Senator PROXMIRE. Yes, sir; go right ahead, sir. Of course you are.

Mr. ALLEN. Senator Proxmire, I would like to thank you for your support, and we wish you many enjoyable days before your retirement now.

Mr. Chairman, honored committee members, my name is Michael Allen. I am the president of the Lac du Flambeau Bank of Lake Superior Chippewa Indians. Our tribe and reservation is located in northern Wisconsin.

INDIAN HOUSING ACT OF 1988

Last week, I appeared on the House side to testify in support of the Indian Housing Act of 1988. I told the Congress at that hearing and I will tell you that as much as we support the bill, its passage alone will bring an empty promise, not change. Real change in the housing conditions in Indian country will come only if that legislation is accompanied by the appropriation to match its promise.

I am here today to ask for that appropriation. We need more for Indian housing than last year. Once again, the administration has requested less. The administration in its fiscal year 1989 budget claims to include funds for a 30-percent increase over fiscal year 1988, but for Indian housing, a 50-percent decrease from 2,000 to 1,000 new units is planned. This, in turn, must be compared to an average of around 6,000 new units annually in the late 1970's.

For more than two generations now, you have heard the plea from Indian country to help us to put an end to the travesty that has passed for housing on the reservation.

Our tribe's situation is no different from the general problems. It is made worse, however, by the contrast between tribal and non-Indian housing on the reservation. Our tribe's reservation, with 84,000 acres, contains over 160 lakes, providing some of the best fishing available.

This is prime lakeshore vacation country, and the shorelines are dotted with many beautiful and expensive seasonal and year-round vacation homes.

DEPRESSED ECONOMY

These belong to non-Indians. These are built on privately-owned fee land lost to the tribe and its members through the allotment process several generations ago.

We live in a depressed reservation economy. Over 60 percent of the tribal on-reservation adult population is unemployed, and thus eligible for low-income housing.

Our housing authority maintains 273 rental units and 60 units in home ownership programs. But we have a current waiting list of 180 families and 37 elders for admission to those units.

Even this understates the demand, because it does not take account of those members who would like to move back to the reservation but cannot due to lack of housing. Most families are not eligible to be placed on a waiting list.

NEED FOR 6,000 HOUSING UNITS

We are, therefore, requesting an fiscal year 1989 appropriation for Indian housing which will allow us to construct 6,000 units. This will put us back on track to meeting the housing needs in Indian country, and if sustained at that level, could meet those needs in a decade.

We are also requesting that the appropriations bill provide that unused Indian housing construction funds be recaptured and used to construct Indian housing units elsewhere. Those funds can be redirected to increase the housing units to be constructed in Indian country.

Before I conclude, we would like to protest the administration's proposal to cut the CDBG funding and eliminate UDAG funding. CDBG funding has been used as an important source of capitol for our tribe over the last several years.

This has helped us increase tribal programs and employment, thus helping alleviate our economic problems somewhat.

In closing, I would like to request your support for the Indian Housing Act for 1988 as the authorizing legislation and, more importantly, an appropriation that would begin to fulfill its promise and restore us to the goal of alleviating the acute housing problem in Indian country.

Thank you.

Senator Proxmire. Thank you very much, Mr. Allen. I want to thank you folks, very, very much for your testimony.

[The statement follows:]

STATEMENT OF MICHAEL W. ALLEN, SR., PRESIDENT, LAC DU FLAMBEAU BAND OF LAKE SUPERIOR CHIPPEWA INDIANS

Mr. Chairman, honored committee members, I am Michael Allen, Sr., President of the Lac du Flambeau Band of Lake Superior Chippewa Indians. Our tribe and reservation is located in northern Wisconsin.

Last week I appeared on the House side to testify in support of the Indian Housing Act of 1988. I told the Congressmen at that hearing, and I repeat to you, that as much as we support that bill, its passage alone will bring only empty promises, not change. Real change in the housing conditions in Indian country will come only if that legislation is accompanied by an appropriation to match its promise.

I am here today to ask for that appropriation. We need more for Indian housing than last year. Once again, the Administration has requested less.

In his testimony before the House on April 12, and elsewhere since, HUD Secretary Pierce sounded the theme that HUD is doing more with less. When it comes to Indian housing that is a cruel joke. Only less has been done with less, and the Administration proposes to lower that even further.

The Administration's FY '89 budget claims to include funds for a 30% increase in units over FY '88, but for Indian housing a 50% decrease, from 2000 to 1000 new units, is planned. This, in turn, must be compared with an average of around 6000 new units annually in the late 1970's.

That is less, plain and simple. A lot less. The only things it will produce "more" of are the bad things: more homelessness, more health problems, more people in substandard housing, more rent gouging on the few private rented units available, more deterioration of housing stock, more frustration.

For more than two generations now you have heard the plea from Indian country to help us put an end to the travesty that has passed for housing on the reservation.

You have heard that low income housing is the only practical means of providing decent, safe and sanitary housing on the reservation.

You have heard that private financing for new construction is not available or beyond the reach of our tribal members.

You have heard that there is no alternative housing on the reservation for tribal families and tribal elders -- rental units do not exist, and the remaining housing stock is woefully substandard.

Yet for the last several years the number of new units funded has fallen well behind the population increase on our reservations, and the problem has grown.

Our Tribe's situations is no different from the general problems. It is made worse, however, by the contrast between tribal and non-Indian housing on our reservation. Our tribe's reservation of 84,000 acres contains over 160 lakes, providing some of the best fishing available. This is prime lakeshore vacation country, and the shorelines are dotted with many beautiful -- and expensive -- seasonal and year round vacation homes.

These belong to non-Indians. They are built on privately-owned fee land lost to the Tribe and its members through the allotment process several generations ago. With lakeshore lots starting at $25,000, such homes are beyond the reach of all but a tiny, tiny fraction of our members. But they stand before our members as a daily remainder not only of how we lost our best land, but of the yawning gap between the promise of the American dream and the grim of reality of poverty.

We live in a depressed reservation economy. Over 60% of the tribal on-reservation adult population is unemployed, and thus eligible for low-income housing.

Our Housing Authority maintains 273 rental units and 60 units in home ownership programs. But we have a current waiting list of 180 families and 37 elders for admission to those units. Even this understates the demand, because it does not take account of those members who would like to move back to the reservation, but cannot for lack of housing. Those families are not eligible to be placed on the waiting list.

Right now, almost 95% of the housing for tribal members which meets minimum standards is HUD financed. Many families occupy substandard -- often severely substandard -- housing indefinitely while waiting to obtain public housing.

The Tribe has a good housing program and is proud of its management of its HUD - funded housing units. We have proven our capability to build and run those units. But the need for more housing is great and growing greater. The need is now being met only by unsafe, unsanitary and overcrowded substandard housing.

We are therefore requesting an FY '89 appropriation for Indian housing that will allow for the construction of 6000 units. This will put us back on track to meeting the housing needs in Indian country and if sustained at that level could meet those needs in a decade.

We are also requesting that the appropriations bill provide that unused Indian housing construction funds be recaptured and used to construct Indian housing units elsewhere. Those funds can be redirected to increase the housing units to be constructed in Indian country.

Before concluding, we would like to protest the Administration's proposal to cut CDBG funding and eliminate UDAG funding. CDBG Funding has been an important source of capital for our tribe over the last several years, has helped us increase tribal programs and employment and thus helped alleviate our economic problems somewhat. We have not yet obtained UDAG funding but would like the opportunity to do so, as that program is one of the few programs which directly addresses the lack of capital for economic development.

In closing, I would like to request your support for the Indian Housing Act of 1988, as the authorizing legislation and, more importantly, an appropriation that will begin to fulfill its promise and restore us to the goal of alleviating the acute housing problem in Indian country.

STATEMENT OF BOYD HANSEN, HOUSING AUTHORITY OF SALE LAKE COUNTY, NATIONAL ASSOCIATION OF HOUSING AND REDEVELOPMENT OFFICIALS

Senator PROXMIRE. Our next witnesses will be Mr. Boyd Hansen, Harriet Macklin, Mr. John Simon, Ms. Mary Ann Russ, and Ms. Eleanor Kohn.

Mr. Hansen, I understand, is the commissioner of the Housing Authority of Salt Lake County. He represents the National Association of Housing Development Officials.

Mr. Hansen, go right ahead, sir.

Mr. HANSEN. Thank you, Mr. Chairman. My name is Boyd Hansen. I am a commissioner for the Housing Authority of Salt Lake County, but I am speaking today on behalf of the National Association of Housing and Redevelopment Officials.

Our observation has been that HUD programs have been sacrificed more than any other domestic program in an effort to reduce the national deficit. I am sure you know, Mr. Chairman, that the HUD has suffered up to 75 percent reductions in budget authority since 1981.

Programs are hurting while the number of needy and homeless families increase daily. There are 1.3 million units of public housing which provide a decent place to live for more than 4 million Americans, but the supply is aging, and it is not being replenished.

Meanwhile, our waiting list for assisted housing continues to grow, with 800,000 families now on our list. Some of our housing authorities have closed their waiting lists and cannot take new applications because there is no chance to fill the need.

FEDERAL SAFETY NET LACKING

The federal safety net is simply not there when people need it. The average wait for a unit is 13 months; in some cases, several years. The HUD pipeline for construction of low-income housing is running dry. Virtually all the pipeline was funded during prior administrations.

NAHRO recommends $7.3 billion for assisted housing in 1989. The suggested mix of programs is 77,000 net new housing units. A chart is attached for your reference to the papers we have given you.

Public housing modernization funding is proposed at $1.7 billion. This will help us keep our old units habitable and occupied. The HUD Commission Report on Public Housing Modernization Needs identified a $23 billion need during the next 10 years.

Public housing operating subsidies are proposed at $1.7 billion for 1989. We believe that this funding level will fully fund the routine maintenance, utility cost, insurance, and other administrative costs under the revised performance funding system.

Mr. Chairman, operating subsidies are the lifeblood which keep low-rent public housing alive. The outlays for this account are almost the same as the budget authority. We are housing the poorest of the poor at rents 30 percent of their net income. The average public housing resident only earns $6,500 a year. The average rent is $104 per month, and the average operating cost per unit is $357 dollars per month.

We are the safety net, Mr. Chairman, for 4 million very low-income Americans. NAHRO suggests a $337 million level for public housing new construction. This will fund approximately 5,000 public housing units.

NAHRO supports a funding of rental rehab program at $200 million. This will support approximately 59,000 units. The Community Development Block Grant Program complements assisted housing programs by providing land and infrastructure to make housing affordable.

By rehabilitating both homes and businesses, jobs are created and deterioration and vacancies are stopped. NAHRO supports a $3 billion funding level for this workhorse of neighborhood stabilization.

URBAN DEVELOPMENT ACTION GRANTS

Urban development action grants [UDAG], has a track record of leveraging $7 in private funds for every $1 of federal investment. Its creation of both construction and permanent jobs make it a success story of private-public partnerships. It is cost effective. This is proven.

Loan repayments to the cities by the developers participating in UDAG projects in 1987 exceeded the entire year's appropriation.

Senator PROXMIRE. Can you wind up?

Mr. HANSEN. What is that, sir?

Senator PROXMIRE. Could you wind up in about a minute, sir?

Mr. HANSEN. Yes; I am just a few moments, here—exceed the entire year's appropriation of $225 million and NAHRO recommends funding of $225 million for this year.

There is one other program that is targeted for termination and that is the section 312 rehabilitation loan program. It is a self-supporting program where we use the money, recycle the money. It has proven that it is a real good one. We would hope you wouldn't touch that and let it go elsewhere.

In summary, Mr. Chairman, we are asking for the bare necessities in the HUD budget to protect the existing federal investment and continue a minimal safety net for the poor.

We feel our programs have suffered more than enough of their share. It is time we looked elsewhere for savings. Thank you.

Senator PROXMIRE. Thank you very much, Mr. Hansen.

[The statement follows:]

STATEMENT OF BOYD HANSEN, COMMISSIONER, HOUSING AUTHORITY OF SALT LAKE COUNTY, ON BEHALF OF THE NATIONAL ASSOCIATION OF HOUSING AND REDEVELOPMENT OFFICIALS

Thank you, Mr. Chairman, my name is Boyd Hansen and I am a Commissoner of the Housing Authority of the County of Salt Lake.

The authority owns and manages 615 units of public housing and administers 1000 units of Section 8 assisted housing. Approximately one quarter of our assisted housing is occupied by senior citizens whose average length of stay is four years. Another 25 percent of our units house large families in three bedroom or larger units. Their average length of stay is two years.

The authority is particulary proud of its project self - sufficiency program which works with single-parent families to complete their education, learn job skills, and become productive members of the greater Salt Lake community while residing in Section 8 - assisted low rent housing. This effort has enabled 35 heads of families to gain full-time employment.

There are currently 2000 households on our waiting lists for public or assisted housing.

Mr. Chairman, you and your colleagues on the HUD Appropriation Subcommittee are confronted with wrenching decisions between and among many important domestic programs, not only of HUD, but of 17 other federal agencies.

With the Budget Summit Agreement of last fall dictating the outside limits of domestic discretionary program funding levels, there is little room for flexibility by your subcommittee. Given those constraints and the unprecedented funding reductions which housing programs have suffered during the past 7 years, we suggest that no increases beyond FY '88 levels be entertained by the subcommittee until all current discretionary programs are held harmless at FY'88 levels plus a 4 percent inflation factor. This will ensure a more 'level playing field' on which to judge program merit.

We come to this conclusion having observed the budget allocation process and deficit reduction cuts in fiscal 1988.

How does one decide among pressing domestic needs like low income housing; homeless shelters; the space shuttle; basic science research; clean water; and veterans medical care? It is a thankless job requiring hard-nosed decisions.

From our perspective in the housing and community development field, we believe HUD programs have been sacrificed more than any other domestic spending program -- to reduce the national deficit. You know the figures, Mr. Chairman... a 75 percent reduction in HUD budget authority since 1981. Programs are limping along while the numbers of families doubled up, split up, or homeless grow daily.

The 1.3 million units of public housing provide a decent place to live for more than 4 million Americans. But this supply is aging and is not being replenished. Meantime, our waiting lists for assisted housing continue to grow, with 800,000 families now on our lists. Some public housing authorities have been forced to close their waiting lists and stop taking applications because the waiting time and likelihood of a housing unit coming up are so remote. For those shut off from our waiting lists the American dream is a false promise.

The average wait for an available unit is 13 months. In tight housing markets that wait can stretch into several years. For those on our waiting lists, the so-called 'federal safety' net simply is not there for them when they need it.

The HUD pipeline of low-income housing construction has run dry. Virtually all of that pipeline was funded during the prior administration. Net new low-rent units added to the supply numbered 116,910 in 1980. By 1988, that number declined to 21,368. We are rapidly losing ground, Mr. Chairman, in the effort to provide decent shelter at affordable rents. Each year we lose 200,000 low-rent units from the private housing supply.

Our community development agencies are losing the battle to stabilize neighborhoods by attracting retail sales and service outlets and employers with job opportunities for low and moderate income residents. The dwindling resources to do the job have resulted in a high degree of frustration among very dedicated public servants at the local level. They feel they have been deserted by their federal partner in making communities whole again.

NAHRO recommends $7.3 billion for assisted housing in 1989 with a suggested mix of programs yielding 77,000 net new housing units. This is 905 fewer units that the FY'88 total incremental units. We believe our proposed mix of public housing, Sec. 8 certificates, mod rehab, and vouchers is a realistic approach to the varied and unique needs in localities across the country.

Our suggested mix is as follows:

Public Housing	5,000 UNITS
Indian Housing	2,000 UNITS
Sec. 8 Certificates	19,000 UNITS
Sec. 8 Mod Rehab	5,000 UNITS
Sec. 8 Vouchers	35,000 UNITS
Sec. 202 Elderly	11,000 UNITS

A chart is attached to this testimony showing our proposed unit breakout, per unit costs, term, and budget authority. I would point out that we propose $600 million be allocated for loan management, property dispositions, lease adjustments, opt-outs, and demolitions. Any additional program amendments should be funded from recaptures, carry-overs, or a supplemental appropriation.

Public Housing Modernization Funding is proposed at $1.7 billion. This will enable PHAs with aging housing in need of major renovation to keep units habitable and occupied. As you know, the HUD-commissioned report on public housing modernization needs identified a $23 billion dollar need during the next 10 years.

The average age of public housing is 18 years. In many communities, however, public housing dates from the early 1950'S. The Housing and Community Development Act of 1987 proposes a program of more rational planning of capital replacement needs and more predictable funding of those needs. At the same time, however, that law imposed new funding demands on Modernization monies by requiring a lead-paint testing and abatement program estimated by a HUD consultant to cost at least $612 million during the next five years, excluding substantial relocation costs to move families out of units being tested and abated.

Public housing operating subsidies are proposed at a $1.7 billion level in fiscal 1989. We believe this funding level will fully fund routine maintenance, utility costs, insurance, and other administrative costs under a revised Performance Funding System (PFS).

As you know, Mr. Chairman, operating subsidies are the life-blood which keep low-rent public housing solvent. The outlays for this account are virtually the same as the budget authority. We believe the President's budget request understates operating subsidies by $203 million.

The reason operating subsidies are so important is because we are housing the poorest of the poor at rents at 30 percent of their income. The average public housing resident's income is $6,500. The average rent is $104 per month. The average per unit operating cost per month is $357.

We are the safety net, Mr. Chairman, for 4 million very low income Americans.

NAHRO believes a minimum level of new construction of public housing is needed to assure a one-for-one replacement policy for those localities demolishing units to reduce density or combining small units into large family units to meet current needs. This will also permit some limited development in tight housing markets where there is a pressing need for low income housing. We suggest a $337 million level which will fund approximately 5000 public housing units.

To increase the supply of lower income housing, utilizing the existing stock, NAHRO supports the funding of the rental rehab program at $200 million which will support approximately 59,453 units.

In order for low income housing to succeed, it must be located in stable neighborhoods with supportive retail outlets and services and access to jobs. The Community Development Block Grant program complements assisted housing programs by providing water and sewer lines, street lights, curbs, gutters, and sidewalks, and recreation areas. It brings buildings up to code standards and heads off deterioration and vacancies.

NAHRO supports a $3 billion funding level for this workhorse of neighborhood stabilization. The Community Development Block Grant program is one of the most targeted federal programs to assist low and moderate income Americans. Pursuant to the HCD Act of 1987, it was further targeted to 60 percent low and moderate income benefits.

Essential to any neighbrohood revitalization effort is private participation, particularly from the jobs sector. Urban Development Action Grants provide the initial federal investment and risk-taking which attracts and leverages private dollars, investment, and jobs.

Its track record of leveraging 7 private dollars for every 1 dollar of federal investment, its creation of both construction and permanent jobs make it a success story of public-private partnerships.

Its cost effectiveness is proven. The National Housing Task Force report notes that in 1987 loan repayments to cities by developers participating in UDAG projects exceeded the entire year's 1987 appropriation of $225 million.

NAHRO recommends UDAG funding of $225 million in fiscal 1989.

To continue to meet the needs of our nation's senior citizens, NAHRO proposes loan authority for the Sec. 202 program of $630 million, which will produce about 11,000 housing units.

We disagree with the 'creative budgeting' proposed by HUD and OMB to divert this program to homeless shelter needs in lieu of funding emergency shelter grants. Such a proposal unfairly pits the elderly against the mentally handicapped for assistance. We propose emergency shelter grants be funded at $50 million in 1989.

Congregate housing has clearly demonstrated its cost effectiveness in preventing the premature and costly institutionalization of frail elderly persons. Congress recognized this in the HCD Act of 1987 by making this demonstration program a permanent one.

NAHRO supports a total appropriation for congregate services of $10 million, of which $4.4 million would continue to assist the existing 62 congregate facilities and $5.6 million would provide new congregate services to residents of Sec. 202 and public housing.

I have skipped over a number of our funding proposals in the interest of time. They have been submitted for the record. I mention one last successful program proposed by the administration for termination.

The Sec. 312 rehabilitation loan program is self-supporting and provides low interest loans to homeowners who otherwise could not obtain financing to repair or replace major components of their homes. We urge continuation of this proven program and resist any attempts to divert the loan repayments to fund other programs.

In summary, Mr. Chairman, we are asking for bare necessities in the HUD budget to protect the existing federal investment and continue a minimal 'safety net' of shelter and neighborhood stabilization programs for those least able to fend for themselves.

We ask that the Subcommittee approach its task this year with an even hand, recognizing the 75 percent decrease in budget authority for housing since 1981, and recognizing the disproportionate cuts taken by HUD programs in fiscal '88 while other programs were protected. The HUD account has suffered more than its fair share of budget cuts during the 1980'S to satisfy deficit reduction goals. It is time to look elsewhere for savings.

NAHRO Recommended Appropriation Levels
Fiscal Year 1989
Assisted Housing Annual Contributions

	Units	Cost	Term	Budget Authority (000's)
PUBLIC HOUSING				
Reconstruction/or Development	5,000	$67,323	N/A	$336,623
Indian	2,000	$73,809	N/A	147,600
Lease Adjusuments	N/A	N/A	N/A	20,100*
Modernization	N/A	N/A	N/A	1,732,300
Subtotal	**7,000**			**$2,236,623**
HOUSING VOUCHERS				
Vouchers	35,000**	$4334	5	$758,450
Section 8 Opt-Outs	(1,500)	$4,334	5	32,505*
P.H. Demolitions	(2,500)	$4,334	5	54,175*
Voucher PHA Fee	N/A	$554	5	96,950
Subtotal	**39,000**			**$942,080**
SECTION 8				
Existing Certificates	19,000	$5,659	15	$1,612,815
Moderate Rehab	5,000	$6,613	15	495,975
Loan Management	(10,000)	$3,736	5	186,800*
Property Disp.	(4,000)	$5,100	15	306,000*
Subtotal	**38,000**			**$2,601,590**
ELDERLY HOUSING				
Section 202/8	11,000	$6,912	20	$1,520,640
TOTAL ALL PROGRAMS	**95,000**			**$7,300,933**
INCREMENTAL UNITS	**77,000**			

** assumes same level as FY 1988*

*** assumes allocation of vouchers to 50% of Rental Rehab Units*

STATEMENT OF HARRIET MACKLIN, NATIONAL LEASED HOUSING ASSOCIATION

Senator Proxmire. The next witness will be Ms. Harriet Macklin, president of the National Leased Housing Association.

Ms. Macklin?

Ms. Macklin. Thank you. Good afternoon. My name is Harriet Macklin. I am employed by the Housing Assistance Council, and I am also proud to state that I am president of the National Leased Housing Association, on whose behalf I am testifying today.

The National Leased Housing Association represents more than 750 members, organizations involved in government assisted rental housing, which includes developers, investment bankers, owners, managers, public housing authorities, state housing finance agencies, local governments, attorneys, accountants, as well as architects.

Our organizational purpose for being here today is to urge this Committee to fund assisted housing in fiscal year 1989 at the fiscal year 1988 appropriation level.

The Congress has wisely rejected the administration's proposal to reduce or terminate housing and development programs, the section 8 certificate program, housing counseling services, and congregate services for the elderly.

ASSISTED HOUSING PROGRAMS CUT 70 PERCENT

Since 1981, budget authority for assisted housing programs has been cut by over 70 percent. We cannot emphasize too strongly that assisted housing has already taken its fair share and more of the budget reduction.

The traditional federal role in low-income rental housing production must continue. The federal government has an essential role to play in ensuring that every American is adequately housed.

Although more reliance is placed on existing housing through such sound programs as the PHA Administrator's section 8 certificate program, the government has the obligation to assure that housing stock exists in the first place.

For example, there are still many communities in the southern states, of which I work, that don't have safe, sanitary decent existing housing stock. Whether such stock is produced through deep or shallow subsidies and the varying degrees of interplay between federal, state, or local actions are subject for fair debate.

PROGRAM TARGETING FOR FUNDING

Please allow me to take this opportunity again to stress on behalf of the National Leased Housing Association membership not only the dollar funding level, but also the program targeting for funding. We urge your continued support for the section 202 elderly and handicapped housing program, the housing and development grant program, and the section 8 existing certificate and moderate rehab program.

The administration's band-aid approach of using vouchers to solve all of the assisted housing programs is very ill conceived. Vouchers fail to protect the tenants from large rent burdens while a section 8 certificate program caps the amount of income that a tenant can pay as rent at 30 percent.

In fact, recently released statistics have indicated that tenant rents in public housing authority subsidies are higher under the voucher program than under the section 8 certificate program.

National Leased Housing Association has long been on record in support of continued incremental funding for the section 8 existing housing certificate program, a program proven to be most cost effective and effective in the history of government assisted housing.

I personally am experienced with this program for the fact that I have administered this section 8 existing program in Georgia from 1976 until 1982. So I understand the problem and the process.

VOUCHER PROGRAM

The membership urges that the section 8 program be funded at an equal level with the voucher program. Instead of the 100,000 vouchers presently being requested by the administration, we would suggest 50,000 for certificates and 50,000 for the vouchers. In recognition of the lack of available and affordable existing housing in many areas, it is important to maintain a proper balance of housing programs.

The Housing and Community Development Act of 1987 spelled out various incentives that can be used to reduce premature payment of mortgage on government-assisted rental housing.

We urge this committee to make available the monies needed to implement these incentives so that both the owners' and the tenants' rights are protected. Such funding for these options will prove a much less expensive way of maintaining the present quantity of inventory rather than allowing older projects to go out of the inventory and be replaced by costly and new constructed ones.

We look forward to working with this committee and appreciate being able to share our thoughts with you, Senator. In closing, we would like to, along with others, congratulate you on your recently announced retirement. Thank you.

Senator PROXMIRE. Thank you very much, Ms. Macklin. We appreciate very much your statement.

[The statement follows:]

STATEMENT OF HARRIET J. MACKLIN, PRESIDENT, NATIONAL LEASED HOUSING ASSOCIATION

My name is Harriet J. Macklin. I am with the Housing Assistance Council and am President of the National Leased Housing Association on whose behalf I am testifying today.

The National Leased Housing Association represents more than 750 member organizations involved in multifamily rental housing -- public housing authorities, developers, managers, non-profits, financiers and syndicators. All of our members share an overriding concern for the provision of affordable rental housing for low and moderate income Americans. It is this concern which brings us before you today.

Our primary purpose here today is to urge this Committee to fund assisted housing in FY89 at the fiscal 1988 appropriations level.

The Congress, in budget action, has wisely rejected the Administration's proposals to reduce or terminate housing and development programs, the Section 8 certificate program, housing counseling services and congregate services for the elderly. Since 1981 budget authority for assisted housing programs has been cut by over 70 percent. We cannot emphasize too strongly that assisted housing has already taken its fair share, and more of budget reductions. Although specific programs are subject to thorough examination, we must never lose sight of the bottom line conclusion that the federal government has an essential role to play in assuring that every American is adequately housed. This point is reemphasized again and again in the various task force reports on the nation's housing crisis that have been published in the past few months. Even as more reliance is placed on existing housing through such sound programs as PHA administered Section 8 Certificates, the government has the obligation to assure that the housing stock exists in the first place. Whether such stock is produced through deep or shallow subsidies, and the varying degrees of interplay between federal, state or local action are subjects for fair debate. But the traditional federal role in low income rental housing production must continue.

We must take this opportunity to again stress not only the dollar funding level, but also the programs targeted for funding. NLHA urges continued support for the Section 202 program, the housing and development grant program (HoDAG) and the Section 8 existing certificate and moderate rehabilitation programs.

The Administration's band-aid approach of using vouchers to solve all of assisted housing programs is very ill-conceived. Vouchers have yet to be proven a solid means of providing assistance for among other reasons it fails to protect the tenant from large rent burdens while the Section 8 certificate program caps the amount of income that a tenant can pay as rent at 30 percent. In fact, recently released statistics have indicated that tenant rents and public housing authority subsidies are higher under the voucher program than under the Section 8 certificate program. NLHA has long been on record in support of continued incremental funding for the Section 8 existing housing certificate program, a program proven to be the most cost-effective and efficient in the history of government assisted housing. We urge that this program be funded at an equal level with the voucher program, rather than at just one-fifth of the funding vouchers received in FY88. As the Administration has requested 100,000 vouchers in FY89, it would be appropriate in FY89 to fund each program at a 50,000 unit level. And in light of the increasing costs of implementing both the certificate and voucher programs we would also urge that monies be appropriated to provide for the 8.2% administrative fee that is called for in the Housing and Community Development Act of 1987. This fee would go a long way to meeting the rising administrative demands of both programs.

In recognition of the lack of availability of affordable existing housing in many areas, it is important to maintain a proper balance of housing programs. To this end, we emphasize our continued strong support for the development of needed units through programs such as the housing development grant (HoDAG) program. While we realize that the program will sunset at the end of FY89, we urge you to restore appropriations for the HoDAG program in its final year, as it is one of the few remaining means of housing production.

With the number of new units produced reaching a record low, and the lack of affordable housing reaching unprecedented levels thus creating an ever increasing and unconscionable homeless population, preservation of low income units is crucial. The Housing and Community Development Act of 1987 spelled out various incentives that can be used to encourage preservation of units. We urge this Committee to make available the monies needed to implement these incentives so that both owners' and tenants' rights are protected. Such funding for these options will prove a much less expensive way of maintaining the present quantity of inventory rather than allowing older projects to go out of inventory and be replaced by costly new constructed ones.

We look forward to working with this Committee and appreciate being able to share our thoughts with you.

STATEMENT OF JOHN SIMON, NATIONAL HOUSING CONFERENCE

Senator PROXMIRE. We will now hear from John Simon, director of the National Housing Conference?

Mr. SIMON. Thank you, Mr. Chairman. The National Housing Conference supports funding of HUD programs at as high of levels as possible consistent with the authorizations contained in the Housing and Community Development Act of 1987.

We urge rejection of proposed termination of public housing and construction, HoDAG, 312, UDAG, and 108 programs and of the limiting of funding in the federal credit formula in a different way.

We also oppose reduction of the CDBG funds which are so important to communities. The rest of my statement has been submitted to you, and I don't think it is necessary for me to read it. Much of what I would like to say has been said.

I would just like to say we view this as another status quo budget or somewhat reduced status quo budget based on what is already a sharply reduced program. We know you have financial problems; we know you have a deficit, but housing has taken more of a cut than anybody else.

So I think the housing industry in the broadest sense has contributed to making an effort toward a balanced budget, which, of course, was not achieved because the administration has seen fit to put its money some other place.

I would also like to say, Mr. Chairman, that if you see the New York Times editorial of today, I agree that the country is approaching, has approached a crisis in housing and is soon approaching an emergency. I think in the next few years to come, the housing shortage for affordable housing will reach catastrophic proportions. Not only do we fail the aforementioned buyout program, but the increase in families that are being created, the increase in immigration and the legalization of so-called unregistered aliens who are now entitled to housing puts enormous pressure on the housing program.

It is estimated that in New York alone, because of the situation developing in Hong Kong, more than 200,000 immigrants from the Chinese mainland legitimately will come to New York, and they will have to be housed.

I think if something isn't done, you will have the kind of housing crisis that will cause the next budget chairman, and I wish you would stay around, Mr. Proxmire, the kind of problems that will require many sleepless nights in finding an awful lot of money.

I think it is time to deal with it now. I don't think you can do it this year. I think an orderly and a well thought out program of how to fund the housing needs for the American people of this country must be done now. No matter how you turn the coin, you have to find additional money.

Billions of dollars were found to bail out the banks. Tax changes in the proposed tax code has given hundreds, or will give hundreds, of millions of dollars of benefits, I think, if they pass, to certain special interest groups.

Perhaps the best special interest group you could find is the housing industry. The National Housing Conference represents the public, the private, the nonprofit sector, the builders in the financial community and their mutual consensus that more housing is needed. That is a consensus throughout our part of the country.

I am sure in the months to come, you will all hear from your constituents. And you should encourage your constituents to put pressure on whoever is succeeding you and on this budget committee to find the money which must be found to house the American people in the way that we don't have to be ashamed of and we can be proud of.

The rest of this is contained in my statement. I thank you for listening to me, and I hope you will heed some of the things that everybody is saying here. Thank you very much.

Senator PROXMIRE. Thank you very much, Mr. Simon, for an excellent statement. Your statement will be printed in full in the record.

[The statement follows:]

STATEMENT OF JOHN SIMON, PRESIDENT, NATIONAL HOUSING CONFERENCE, INC.

Mr. Chairman and Members of the Subcommittee, my name is John Simon. I am the President of the National Housing Conference and I appreciate this opportunity to present the views of NHC on HUD Appropriations for FY 1989.

Once again, the Administration has submitted a budget request for HUD which is inadequate to meet the many pressing needs with which the Department is supposed to deal. Once again, the HUD budget request proposes to terminate key and important programs for meeting the housing needs of the nation's low and moderate income and assisting our cities to deal with their community development needs.

This budget proposes the termination of the Public Housing, HoDAG and 312 Rehabilitation Loan programs, all key to meeting housing needs. It proposes the termination of the UDAG and Section 108 loan guarantee programs, which have been key in helping cities deal with their economic and physical needs. The termination of these programs have all been proposed in the past and rejected by the Congress. We urge a similar rejection this year.

If there are any bright spots this year, it is that the Administration has apparently abandoned its several-year old effort to terminate the 202 Housing for the Elderly Program and that it has not sought the wide-scale rescission of FY 1988 funds that have been sought in previous budget requests for the then current fiscal year's funds. On the other hand, the 7,000 units proposed for the 202 Program represent a sharp drop from the 11,000 - 12,000-unit level of the past few years. We urge a return to at least that level.

This year's budget does include, however, a new gimmick which we urge the Congress to reject out-of-hand. This is the proposed appropriation of some $2.6 billion to implement so-called "Federal Credit Reform". Under this new plan, no Federal loan or guarantee program could function except to the extent that there had been paid to the Treasury by the program's operating agency, such as HUD in the case of FHA, GNMA and several other programs, an amount equal to the "implicit subsidy cost" associated with each loan or guarantee made.

These, so-called implicit subsidy costs would not represent real costs to the Government but, rather, somebody's estimate of savings achieved by the recipient of the loan or guarantee because of the Federal involvement. Finding the money to fund the real costs of the many essential HUD programs is a difficult enough task, as you are well aware; it should not be complicated by such "funny money" proposals as are inherent in this wrongly termed credit reform proposal.

We greatly appreciate the strong support that this Subcommittee and the whole Congress have given over the past several years to HUD's low and moderate income housing and community development programs. Without that support, the Administration's efforts to gut most of those programs would have succeeded. We urge you to continue that support and provide as much funding as possible, within the recognized constraints of the budget agreement reached with the Administration and this year's anticipated Budget Resolution levels.

We need to increase substantially Federal assistance for low and moderate income housing. The growing homelessness problem is ample evidence of the damage wrought by the sharp cutbacks in housing assistance programs. If additional sacrifices are necessary to meet budget constraints, those sacrifices should be taken elsewhere, not out of the already decimated housing programs.

Attached for your information is a copy of the Policy Statement adopted at NHC's Annual Meeting in March. That statement addressed many of the key HUD programs whose funding you are considering. We urge you to review the statement and implement, wherever possible, the funding levels it calls for. Some of our principal recommendations are:

- The Public Housing Program should be continued at a level of 20,000 units. Modernization should be funded at a minimum level of $1.732 billion. Adequate operating subsidies should continue to be appropriated, at least at the $1.53 billion level authorized in the Housing and Community Development Act of 1987.

- The Community Development Block Grant Program should be funded at a minimum level of $3 billion and none of this funding should be stolen from the 312 Rehabilitation Loan Program. The Section 108 Loan Guarantee Program should be continued at a $153 million level.

- The UDAG Program should be continued at the minimum $225 million funding level authorized in the 1987 Housing Act. We also oppose the proposed rescission in FY 1989 of $50 million in the "unannounced balance" of grant authority.

- Sufficient funds should be provided to support at least 200,000 additional units of multifamily rental housing for low and moderate income families and the elderly and the handicapped, using a combination of the 202, Housing Development Grant, Rental Rehabilitation, Section 8 Moderate Rehabililtation, and Section 8 Certificate programs.

- We continue to oppose any effort to replace the Section 8 Certificate and Moderate Rehabilitation programs with vouchers. We also oppose all efforts to convert existing Section 8 certificates into vouchers, including the conversion of expiring loan management set-aside certificates, tied to specific projects, into vouchers usable anywhere.

- We support continued homeownership assistance, including the tried and proven 235 Program and full funding of the Nehemiah Program as authorized in the 1987 Housing Act.

- The 312 Rehabilitation Loan Program should be continued at least at the loan repayment level.

- We support continued funding in FY 1989 of the programs authorized by the McKinney Homeless Assistance Act, at levels at least equal to those appropriated this year.

- Adequate guarantee levels should be provided for FHA, FNMA, and the Veterans Administration, to assure that these necessary programs are able to meet the demand.
- There should be no increase in the present user fees imposed under the various FHA, GNMA, and VA programs.
- We supported the increased funding of HUD's staffing needs in FY 1988 and urge the rejection of the Administration's proposed cut in that staffing in FY 1989.

Thank you for your past strong support for maintaining these important programs of HUD. We urge that you continue that support in reaching your decisions on HUD's FY 1989 appropriations.

Legislative Policy
of the
National Housing Conference
1988

INTRODUCTION

In 1987, the nation commemorated the 50th anniversary of the Public Housing Program and, yet, found itself still confronted with a massive need for low and moderate income housing. The widespread presence of the homeless in our cities visibly manifested this need. At the same time, an anticipated large-scale decrease, over the next ten years, in the existing stock of assisted housing loomed and the Administration continued its efforts to move the Federal Government away from any substantive housing role.

In response, NHC at its Annual Meeting called for the mobilization of a broad constituency for housing at both the Federal and State legislative levels and among the American people in general. This call by NHC, and many other organizations and persons concerned with meeting our nation's housing needs, struck a responsive chord. The first free-standing Housing Bill in seven years was passed by the Congress in December and signed by the President early in 1988.

This Housing and Community Development Act of 1987 represents the first step in the needed reaffirmation of a significant Federal responsibility for assisting in meeting the nation's housing needs. While the Act breaks little new ground, it continued existing housing and community development programs for a two-year period through Fiscal Year 1989, rejecting the Administration's proposals to terminate many long-standing programs. Its enactment hopefully signals the end of any real prospect for the massive recasting of present housing and community development programs sought by the Administration since it came to office in 1981. While the damage has been great to programs and commitments in place, most of those programs and a continued recognition of those commitment have survived.

1987 saw other positive developments. The leadership of the Senate Housing Subcommittee announced its intention to start the process of pulling together as broad a compendium as possible of the nation's housing needs and how to deal with them, with the goal of having in place major housing proposals to receive serious consideration upon the arrival of a new Administration in January, 1989. The leadership of the House Subcommittee on Housing has joined the Senate Housing Subcommittee in this effort.

Independent, broad-based task forces have been established to develop recommendations for the Subcommittees' consideration, and in-depth analyses of housing-related problems, and suggested solutions to those problems, have been prepared by an eminent group of academicians. In addition, the Senate Subcommittee, with the endorsement of the Chairman of the House Subcommittee, sought and obtained the housing program recommendations of over 70 national organizations, local groups and individuals. These have been published and are expected to form, along with the task force recommendations and the academicians' papers, the basis for hearings to be held across the country in 1988 by the two Subcommittees.

NHC applauds these efforts and pledges to continue its strong support for them and for the resumption, as soon as possible, of actions recognizing the need for a strong Federal role in meeting our nation's housing and community development needs. These actions must include the resumption of significant assisted housing production, as well as major efforts to preserve the nation's present stock of low and moderate income housing. They must include both the use of direct appropriations as well as reasonable tax incentives, and they must be designed to encourage the fullest possible participation by State and local governments in helping to fulfill these obligations.

This investment in housing should also be designed so as to strengthen the social fabric of communities, by stimulating the coordination and allocation of human resources which foster personal growth and self-sufficiency for the residents of those communities.

In addition, it is essential that the needs of our nation's urban and rural communities, many with aging infrastructure and obsolescent economic bases, not be ignored. Efforts should be continued and expanded wherever possible, to assure that every American not only has an opportunity for a decent home but also for a decent neighborhood in which to live.

In futherance of these goals, we urge action by the Congress on the following individual proposals:

ADDITIONAL LOWER INCOME HOUSING

It is essential that programs be enacted and funded, which are capable of providing significant, annual additions to the stock of housing units available to the lower income. These programs should (1) be broad-based, providing assistance to profit-motivated developers, nonprofit organizations, cooperatives and to, or through, state or local housing agencies; (2) their subsidy mechanisms must be flexible enough to cover tenants of varying income levels but without sufficient income to pay their own way; and (3) the housing assisted should be preserved, with adequate subsidies, for lower income use for 40-50 years.

With these key components as guides, a two-pronged lower income housing production program should be enacted:

1. Assistance should be provided directly from the Federal Government (presumably HUD) to those who will develop and own the housing, thus assuring the widest possible dispersion of the funds, and with allocations being made based on the needs of the locality in which the housing is to be provided. Assistance should be flexible enough so as to permit all whose income does not exceed 80% of median to be assisted, allowing for greater economic integration than is possible under the present 50% of median limitation and helping to avoid over-concentration of the very poor in individual projects.

2. Assistance should also be provided to state and local housing agencies for use in conjunction with their own efforts to increase the supply of lower income housing, with the manner in which the funds are used limited only by the requirement that their use results in the production of lower income housing and by such few other safeguards as are needed to assure that monies are not misapplied, misappropriated or otherwise misused. This will permit the many innovative approaches, developed and possible of development at the state and local levels, to be assisted without excessive Federal regulation. Priority for receipt of these funds could, perhaps, be based upon the amount of funds contributed by the agency from its own resources or some other measure of local efforts, thereby rewarding those agencies, States, and localities which show a real interest in moving forward on meeting their lower income housing needs. Such a priority, however, is only reasonably possible if direct funding to housing owners is also provided. State and local housing agencies should also be encouraged to serve those at or below 80% of median income.

Aid under both programs should be able to be adjusted to meet increased operating costs as well as fluctuating tenant income levels. As experience with previous programs has demonstrated, this flexibility is essential to the long-term success of any assisted housing program. The ability to make these adjustments should also not be subject to the vagaries of the annual budget/appropriations process.

The budget impact of these new programs should be calculated in a manner consistent with the way in which the budget impact of other long-term Federal programs is calculated. Running out cost estimates for periods of twenty or forty years, and assuming, for example, that all tenants at all times during such a period would have zero incomes, presents a false impression as to what the true cost of the housing assistance with respect to any specific project might be. It is no more valid to make such a calculation than it is to include, in the cost of acquiring a new federal office building, its estimated operating costs over its anticipated life.

We support a minimum funding level of 200,000 additional units of multifamily, rental housing during FY 1989 for families, the elderly and the handicapped. This funding should be allocated among the new production programs proposed, above, and the existing, proven programs of Public Housing; Section 202; Section 8 Moderate Rehabilitation; HoDAG; Indian and Native American Housing; Rental Rehabilitation; and, where there is an adequate supply of existing housing, Section 8 Certificates.

It is essential that these present programs, many of which serve discrete needs and segments of the housing market, be maintained with adequate funding and without unreasonable restrictions, especially during the period of one to two years it will take the proposed new production programs to be put in place. Accordingly, NHC makes the following recommendations with respect to these present programs.

Public Housing

- We support, for fiscal year 1989, funding for at least 20,000 additional units of public housing.
- We support full funding of the CIAP (modernization) program in FY 1989 at a level at least equal to the $1.732 billion authorized in the Housing and Community Development Act of 1987, to assure the preservation of the existing public housing stock and avoid the demolition of projects which can be rehabilitated.
- We support a level of operating subsidies under the Performance Funding System that will permit housing authorities to maintain units properly and to provide adequate staff for the management of their projects. We urge appropriation of the $1.53 billion for FY 1989 authorized in the Housing and Community Development Act of 1987.

Rural Housing; Indian and Native American Housing

- We oppose the proposed termination of FmHA housing and development programs in FY 1989 and the proposed partial replacement of these programs with Section 8 vouchers. Vouchers are an absolutely unworkable solution to the housing needs of rural America.
- We support continued full funding, at a total level at least equal to FY 1988, for FmHA's housing programs, including the rural single-family and rental programs which primarily service low-income families. We urge that the funds for the 515 rental program be increased to at least the original FY 1987 level of $669 million and that rural housing preservation funding under Sec. 533 be increased to $38 million to allow preservation assistance to be provided for rental housing as well as owner-occupied housing. We continue our support for a reasonable authorization level for rural rental assistance, the self-help housing program, and 504 repair grants for elderly homeowners.
- We support the continuation of existing housing programs for Indians and Native Americans and full funding of the infrastructure needed to support such housing. No housing should be constructed without adequate sanitary facilities.
- We support appropriation of sufficient funds to assure adequate staffing of the FmHA housing programs.

Other Federally Assisted Housing Programs

- We support continution of the Section 8 Certificate and Moderate Rehabilitation programs and continue to oppose the Administration's efforts to replace those programs with a voucher program.

- We also oppose all efforts, administrative and proposed legislative, to convert existing Section 8 certificates into vouchers, including HUD's proposal to convert expiring loan management set-aside certificates tied to specific projects into vouchers usable anywhere.

- We support the Section 235 program and urge that it be revived with a substantial funding authorization. The program has been a most important tool for the provision of homeownership opportunities for moderate-income families.

- We support full funding of the Nehemiah Program as authorized in the Housing and Community Development Act of 1987.

- We support legislation which would broaden the scope of the Section 202 program and increase substantially the number of units assisted.

- We support legislation (1) to remove the present statutory limitation, imposed in 1981 and moderated in 1987, on the percentage of families with incomes between 50% and 80% of the median that can be admitted to Section 8 and public housing projects, and (2) to restore to 25% the rent-income ratio applicable to tenants receiving public housing, Section 8, rent supplement, 236, and FmHA assistance. These steps, taken together, would improve the viability of these projects, foster increased economic integration and protect the public interest in the projects.

- We support reauthorization and funding in FY 1989 of the programs authorized by the McKinney Homeless Assistance Act at levels at least equal to those appropriated in FY 1988. It is also essential that aid to the homeless move beyond the provision of temporary shelter to the provision of permanent housing and necessary supportive services aimed at promoting self sufficiency.

- We support legislation to prevent the Department of Health and Human Services from restricting Federal reimbursement of rent payments in emergency shelters for the homeless.

- Effective tax incentives need to be restored for all types of lower income housing. While helpful, the low-income housing tax credit is not sufficient in many instances to replace past tax incentives and, until its many technical problems are corrected, its positive effect will continue to be minimal. We urge quick approval of the low-income housing tax credit amendments passed by the House in 1987.

  If effective tax incentives are not restored, any new housing program, as well as existing programs, should be structured so as to reflect the need for sufficient other incentives to attract private investment. It needs to be recognized that a 6% return, in and of itself, is not sufficient under any foreseeable scenario and that direct program subsidies will need to be high enough to permit a return comparable to other investment opportunities.

PRESERVATION OF ASSISTED HOUSING

The preservation of the existing stock of federally assisted housing is one of the most important housing policy issues facing the Congress and the country today. The problem is a complex one. It concerns the imminent and long-term loss of federally assisted low and moderate income rental housing expected to occur principally as a result of three factors: (1) the prepayment of mortgages under HUD's 212(d)(3) BMIR and 236 programs and under the FmHA 515 program; (2) the termination or expiration of Section 8 subsidy contracts; and (3) the loss of assited housing units due to deterioration resulting from age and from inadequate maintenance and capital improvements.

The two issues affecting the greatest number of projects are (1) the need for additional subsidies for projects where existing subsidy contracts are inadequate or will expire and (2) the need for maintenance or capital improvements for projects which lack sufficient project cash flow or reserves to maintain the projects in a decent, safe and sanitary condition.

The federally assisted housing stock includes approximately 2 million privately owned units. Of this total, over one million units may be lost from the inventory by 1995 and 1.8 million units by 2000, as a result of mortgage prepayments or the expiration of existing subsidy contracts.

In order to assure the preservation of as much of this existing inventory as possible and to protect the existing lower income tenants of this housing from displacement or rents in excess of their payment ability, NHC recommends the following policies and programs be adopted through regulatory and legislative changes, as appropriate:

Protect Tenants from Displacement

- Project owners should be required to give tenants and HUD a reasonable and timely notice of the owner's intent to prepay a project mortgage, whether or not a conversion of use is immediately expected to occur.
- HUD should be responsible for assisting in the relocation of tenants, where necessary, including providing relocation and rental assistance. It may also be appropriate to expect owners to provide some level of assistance in the actual physical relocation of tenants displaced by conversion.
- Project-based, rental-assistance subsidies should be authorized and funded by Congress to assist tenants to stay in place whenever possible.
- Where relocation is required and adequate housing stock exists in the local market, tenant-based, rental assistance should be provided. Additional funding should be authorized by Congress for this purpose.

Contract Rights Possessed by Project Owners

- Owners should be permitted to prepay their mortgages without restrictions, other than reasonable and timely notice to tenants.

NHC's preferred approach to dealing with expiring mortgage prepayment limitations is a program of incentives, including tax benefits and/or direct subsidies, to induce owners to retain projects in the assisted housing inventory, in exchange for extended use restrictions. Key areas for consideration are:

- -- additional rental assistance or capital improvement subsidies
- -- expanding the benefits of the low-income housing tax credit
- -- forgiveness of capital gains tax
- -- allowing owners to increase equity distributions through use of project cash flow or reserves

Where possible, these incentives should be generic, so they can be applied to a range of projects meeting certain broad criteria and the need for project-by-project review avoided.

Prevent the Physical Deterioration and Loss of Assisted Housing Units

- o Capital improvement grants or low interest loans should be authorized and funded by Congress. Projects receiving these benefits should be subject to extended use restrictions.
- o HUD should authorize the use of excess project reserve funds to meet physical improvement needs.
- o Where necessary to fund needed improvements, secondary financing should be allowed.

Extend Expiring Subsidy Contracts and Address the Need for Additional Rental Assistance or Operating Subsidies

- o Congress should appropriate additional funds to extend expiring subsidy contracts for at least an additional ten years, in exchange for a comparable extension of use restrictions.
- o Unused or recaptured budget authority should also be used for this purpose.

COMMUNITY DEVELOPMENT BLOCK GRANTS

- o We support a FY 1989 appropriation for the CDBG program at a level at least equal to the $3 billion authorized in the Housing and Community Development Act of 1987. We continue to oppose any efforts to broaden the types of activities which can be undertaken with these funds, changes in distribution formulas or creation of new categories of recipients, or the absorption of other Federal programs (e.g., EDA, FmHA, etc.).
- o The Section 108 Loan Guarantee program has proven to be a most valuable and cost-effective tool for helping in local economic development and other CDBG efforts. We oppose the Administration's proposed termination of the

program. We recommend a loan authorization level of $153 million for FY 1989, as authorized in the Housing and Community Development Act of 1987.

- We support the continuation of the Section 312 rehabilitation loan program and oppose the proposed transfer of its unobligated balances to the CDBG program. The program

  has operated for years through a recycling of funds received from the repayment of existing loans and we support the continuation of this cost-free means of sustaining this important program.

ECONOMIC DEVELOPMENT AND UDAG

- We support a broad range of programs that provide jobs, infrastructure improvements, community revitalization and economic development for the nation's urban and rural communities. This includes specific support for jobs legislation and the UDAG program, which must be continued. We adamantly oppose the proposed termination of the UDAG program and the rescission in FY 1989 of $50 million in the "unannounced balance" of grant authority.
- The UDAG program has been most successful in promoting creative, private-public partnerships which are helping economically distressed cities to attract private capital for economic development. There is currently a greater demand than there are funds for viable, important projects. We support an appropriation level for UDAG in FY 1989 at least equal to the $225 million authorized in the Housing and Community Development Act of 1987.
- We also suggest that consideration be given to an additional discretionary fund of $25 million, which could be used by the Secretary to assist worthwhile, important projects which might not otherwise be funded due to aberrations in the statistics of the project selection system.

COOPERATIVE HOUSING

- We support tax reform for cooperative housing which would clarify that interest on reserves, patronage refunds, and payments to the cooperative under Section 8 and similar programs are member income. We also support tax reform which would provide the benefits of cooperative housing taxation to all cooperatives whose principal purpose is providing housing for its members.
- We request HUD promptly to issue workable regulations for FHA-insured share financing as provided in the 1983 Housing Act.
- We urge that HUD expand the use of the Nonprofit Sponsor Assistance Program to include cooperatives providing low and moderate income housing under the 202 and other programs and that sufficient funds be appropriated for this modest expansion.

FAIR HOUSING; EQUAL OPPORTUNITY; AFFIRMATIVE ACTION

- We support any housing and housing-related programs which further the goals for racial and economic integration. The drastic reduction of funding for new production makes it most difficult for low and moderate income families and handicapped persons to broaden their geographic opportunities for finding decent housing that they can afford.

- We support legislation which would (1) extend the Fair Housing Act to protect the handicapped capable of independent living and families with children; (2) provide for strengthened enforcement by the appointment of administrative law judges to hear and adjudicate housing discrimination complaints; and (3) prevent discrimination by all elements of the housing and home finance industry.

MORTGAGE FUNDS

- We support the maintenance and strengthening of existing programs and activities that direct credit resources into the housing mortgage market, such as FHA mortgage insurance and GNMA mortgage-backed security programs, without arbitrary caps on their use. We support the development of new mechanisms to assure that an adequate amount of mortgage funds are available for housing.

- We reaffirm our long-standing support for FNMA and FHLMC as quasi-public, private corporations, dedicated to directing capital from the secondary markets into housing at reasonable rates. We oppose efforts to weaken these organizations by removing their governmental linkage or imposing so-called user charges. We also urge these organizations to deal with defaulted mortgages, especially in economically depressed areas, in a fashion that reflects the organizations' special Federal relationship.

- We oppose proposed legislation to establish in the Treasury Department a Federal Credit Revolving Fund, into which there would be required to be transferred all assets, liabilities, etc., of any Federal credit program, such as FHA, VA, GNMA, etc., and into which, before any direct or guaranteed Federal loan could be made, there would have to be paid by the appropriate agency, such as HUD, an amount equal to the "implicit subsidy cost" associated with the loan or guarantee. Enactment of such legislation, requiring massive appropriations to cover theoretical subsidy costs, would sharply curtail, if not kill, the many Federal housing credit programs.

- We urge that the authority to issue tax-exempt mortgage revenue bonds be extended, without any reduction in State volume caps.

- We support the restoration of the Credit Control Act of 1969, on a standby basis, to permit use of selective credit regulation at such times as it may be needed in the future to bring about or maintain affordable interest rates.

HUD STAFFING

Frequent expressions of opposition to both its mission and its programs have had a severely adverse impact on the morale of

HUD staff. In many program areas, the staff level is woefully inadequate. Long delays in filling vacancies in subcabinet and other top supervisory positions have given the impression that the Department's role is unimportant. All of this has contributed to a significant decline in espirit de corps and productivity. We urge the Congress and the Secretary of HUD to recognize, affirmatively, the important role that HUD's staff plays in the success of its programs; to take such steps as are necessary to assure that the Department becomes an attractive place for professional and other workers to make a career; and to assure that the Department is staffed at a level adequate to administer, effectively, its many essential responsibilities. We suport the maintenance of the long-needed staff level increases mandated in HUD's FY 1988 appropriations and oppose the staff decrease contemplated by HUD's FY 1989 budget.

PRIVATIZATION

We oppose all efforts to "privatize" the housing programs of the Federal Government. Proposals to sell off public housing to its residents, without regard to their ability to meet the operating costs of that housing and without replacement of that housing on a unit-for-unit basis, represent a complete denial of any Government responsibility to provide for the welfare of its citizens. Similarly, proposals to remove the Federal Government from support for the mortgage market through the efforts of FHA, GNMA, FNMA, etc., would result in a severe retrogression to a time when fewer Americans could expect to own their home because of the inadequacies of the private mortgage credit system. The role of the Federal Government in supporting the goal of a decent home for all Americans is an essential one and we should not allow it to be obscured by the fog of privatization.

STATEMENT OF MARY ANN RUSS, COUNCIL OF LARGE PUBLIC HOUSING AUTHORITIES

Senator PROXMIRE. Ms. Mary Ann Russ, executive director of the Wilmington, Del., Housing Authority, on behalf of the Council of Large Public Housing Authorities is our next witness.

Ms. RUSS. Thank you, Senator Proxmire. I appreciate the opportunity to testify here before you, probably for the last time, on behalf of the Council of Large Public Housing Authorities. Again, we have prepared what I think is really fine written testimony. I didn't prepare it myself, so I can say it is fine.

I am not going to try to read it; it is too long. I am going to try to just hit the high points.

Senator PROXMIRE. We will be happy to print it in full in the record.

Ms. RUSS. Thank you. I also saw the New York Times editorial, and I thought, "My stars must be right." [Laughter.]

CRISIS OF HOMELESSNESS

It talks about the crisis of homelessness. From my point of view, I am a 20-year professional in this business, like those people sitting at the table with me. Homelessness is a housing problem. Homelessness is created by a lack of affordable housing.

It may very well, as the Rand thinkers say, that there is enough housing in the United States, but the homeless people in Wilmington aren't going to Houston. If we want them to, we have got to get them a lot of bus tickets.

John is right. The time to solve this problem is to start now. It is never going to be any cheaper than it is now. We have a list, a little laundry list that I will run through fast so that I get it.

We are asking for operating subsidies for public housing authorities, a $138 million supplemental to make up for the fiscal 1988 shortfall; $1.750 billion in 1989 money; $2.5 billion in modernization; and $500 million for development and major reconstruction.

It is embarrassing; every year we come here and ask you for this money, and we are sorry. We apologize that we have to do this. But we are in an unusual situation compared to lots of governmental agencies. We can't do anything about our sources of income. We are not allowed to raise rents. We don't have the right to go out and tax, and if our operating subsidies are funded at a level that is below that which the formula says we need, it comes straight out of the hides of our residents. There isn't any place else it comes from; it comes out of the services we deliver.

INSURANCE CRISIS

The insurance crisis has hit housing authorities very hard, as you know, and I have been here to testify about that before. Right now, lots of us are able, again, to get insurance. The price we are paying for it is a very high price, and again, it is coming out of the services, the other services we could be providing to our residents, services to make them self-sufficient; services to help them be upwardly mobile.

In modernization, I can't say we were surprised by the way HUD reacted to the APT study that they funded and put forward and now are repudiating, but we really want you to take a long, hard look at what they are saying and at our written testimony, because if you look at the worst case, $18 billion, which is pretty bad, we are talking about $13,300 per unit, and that is a whole lot. What can you build for $13,300? You can't build much.

PUBLIC HOUSING DEVELOPMENTS

We are also saying that HUD is just kind of saying goodbye to some of the questionable developments, and it is true; some of the public housing developments are not worthy of putting any more money in. That would be good money after bad, but we have to think of what the alternatives are, and we have to deal with them soon, sooner rather than later.

Public housing authorities, contrary to what HUD says, can handle a higher level of modernization money. We are staffed up; we are ready. And every year that you give us money, we tend to spend about the same level of money.

In terms of major reconstruction, there are definite needs that HUD is just, in its approach, completely ignoring. It is just kind of saying, "Well, these projects have questionable viability, so goodbye to those projects." But there are a lot of people living there, although they may be questionable. Let us at least study this carefully before we just write off this resource.

The lead paint initiative that was passed—and I see your light—that was passed last year has produced what I can only call peculiar regulations coming from the Department.

Again, we ask that you look at these. We have written comments into those regulations, and they need some work.

Senator PROXMIRE. Thank you very much, Ms. Russ.

Ms. RUSS. Thank you.

[The statement follows:]

STATEMENT OF MARY ANN RUSS, EXECUTIVE DIRECTOR, WILMINGTON, DEL., HOUSING AUTHORITY, ON BEHALF OF THE COUNCIL OF LARGE PUBLIC HOUSING AUTHORITIES

Senator Proxmire, this will probably be the last time that CLPHA will testify before you as Chairman of this Subcommittee. I would particularly like to thank you on behalf of the Council for the concerns you have shown this year in holding oversight hearings on HUD's activities such as the shortcomings and costliness of housing vouchers. We also appreciate your concern for, and awareness of, HUD's efforts to distort the results of the public housing modernization needs study, and your help in getting that study released, as well as your assistance on the lead-based paint and insurance issues in public housing.

Crisis of Homelessness.

Senator Proxmire, all of us watch daily while the crisis of homelessness plays out before us. We see the pictures on TV and hear the stories of families sleeping in abandoned buildings; and we cringe at the horrors of the welfare hotels where the federal government spends as much as $1500 to $3000 per month (in some cities) to warehouse families under inhuman and degrading conditions. Already, major efforts are underway to put strict limits on the term for which such Emergency Assistance payments can be made.

Yet these are only the tip of the iceberg. Homeless people also include those who are doubled up in overcrowded housing units. There are estimated to be over 40,000 such doubled-up households in New York City's public housing alone.

According to the U.S. Conference of Mayors, last year the demand for assisted low-income housing increased in 88% of the cities surveyed, with the average increase in demand a startling 40 per cent. There are also over a million households on the waiting lists for the nation's 1.4 million public housing units, and many waiting lists have been closed for a long time because there is no longer any hope for those at the end of the list to ever get a unit.

In the past, homelessness appeared to be primarily a problem for individuals, especially those with alcohol and drug problems and the physically and mentally disabled. Now, however, homelessness is increasingly a problem of families with children.

The answer to this crisis has to be more permanent housing for low-income households at rents they can afford. HUD says there is no problem -- that major new initiatives are not needed. Those of us who work daily on the front lines in our cities know differently.

The final report of the National Housing Task Force (Rouse/Maxwell) recently issued a call for action, saying "we cannot tolerate the suffering to which more and more of our people are consigned ... there must be answers, and as a nation we must find them. The time has come to raise these conditions to a compelling level of concern -- to the highest priority of attention and commitment...." CLPHA strongly endorses this recommendation. We must get the federal government moving to meet the nation's housing needs once again.

This year the pressures are greater than ever to cut housing programs -- in order to provide for increases in other programs (e.g. NASA), or for new programs. Please don't eliminate what is left of our low-income housing programs in order to do this.

Public Housing Operating Subsidies.

Each year we come begging for operating subsidies and modernization money. It seems like the same old story every year. These funds must be supplied annually in order to guarantee that the operating budgets of PHAs are adequately supported. The statute requires that operating subsidies be provided equal to the difference between the reasonable costs of the PHAs and the income PHAs are allowed to obtain from rents and other sources. Leaving operating subsidies as a 'discretionary' item in the budget, therefore, causes needless annual bickering and turmoil. We think it would let the government focus on more important housing issues if providing the right amount were mandatory.

CLPHA has previously submitted to you in writing the amounts we think are needed for FY89 operating subsidies as well as for FY88 supplemental funding, and we would like to ask for your consideration of these recommendations. [See Summary of CLPHA recommendations at end of this testimony.]

We especially ask for your help in obtaining funds that are adequate to cover the PHAs' reasonable costs of insurance. Because the Performance Funding System (PFS) does not adequately take these costs into account, PHAs are having to sustain significant cuts in their other areas of operation in order to obtain adequate risk-protection coverage. HUD has been directed statutorily to make these adjustments to PFS by no later than June 1988, but because of the Department's foot-dragging, CLPHA has finally been forced to sue HUD to try to bring these changes about.

HUD is now funding PHAs at only 98.4% of the Performance Funding System/operating subsidy requirements, as conceded by the Secretary; the real figure would be 91%, had HUD complied with Congressional directions to reflect the higher insurance costs in PFS. Congress, with this Subcommittee's support, has provided 100% operating subsidy support every year since 1981 with the result that management and tenant services have greatly improved. Please help us again achieve our deserved and needed funding.

Modernization.

Mr. Chairman, you and your Committee have been very helpful in providing funds for upgrading the public housing stock to enable us to continue providing adequate shelter for the needy. Last year, your original mark was $2.2 billion for modernization and major reconstruction, reflecting your recognition of the level that is needed. We ask you to increase that amount for FY89.

The modernization needs of public housing were severely neglected for the first four decades of public housing's existence. During this time, adequate modernization (capital) funds were not provided to public housing either in the form of direct capital funds or through operating subsidies adequate for major capital improvements. As a result, a major backlog of modernization needs developed.

We now have the first report out of the HUD/Abt study of public housing modernization needs. The figures contained in this 'national estimates report' are shown in Attachment A, along with figures from a "policy paper" put out by HUD at the same time. Even considering only those items where the inspecting architects and engineers either 'strongly agreed' (code 1) or 'agreed' (code 2), these needs came to over $18 billion. While this may sound like a large number, the total of "FIX plus agreed-upon ADDs" came to only $13,300 per unit on the average, not really very high -- especially when compared to the value of the stock we're trying to preserve, the age of that stock, and the pattern of neglect that has occurred historically.

Notwithstanding that these on-site inspections were carried out by teams of professional architects and engineers, HUD issued the final "national estimates" report of the Abt study a few weeks ago accompanied by its own policy pamphlet and a press release saying that HUD only thought there was seven to nine billion dollars in need, and even less after deducting funds already in the pipeline.

In announcing its lower figures, HUD simply dismissed the results of the architectural and engineering surveys which cost over $5 million to obtain, and proclaimed instead a new and hitherto undiscussed potential HUD policy that in the future the federal government should fund only the mandatory items in HUD's own handbook. This new policy direction runs directly counter to HUD's current regulations, which require that PHAs include in their comprehensive modernization projects all the work that is needed to ensure the 20-year viability of public housing developments.

CLPHA recently carried out its own study of modernization needs in public housing by gathering information from the 5-year modernization plans which over 40 of the largest PHAs in the country had submitted to HUD. CLPHA's survey confirmed a modernization need of over $18 billion for the nation as a whole, and also indicated that over 30% of the units had a need of under $5,000 in modernization funding. (See Attachment B)

Mr. Chairman, all of the real studies point to the serious need to continue to upgrade the stock. We would like to ask that you put us on a 5-8 year track to achieve this goal, similar to highways and other programs that have a planned schedule for capital improvements.

The system can handle higher modernization appropriations.

Mr. Chairman, HUD continues to assert that the modernization system can't absorb a higher level of funding. HUD always implies that it's only the sloth of the PHAs that is to blame. To rebut this unfounded assertion, we have constructed charts using HUD's own reports on PHA expenditure rates, and attached them to this testimony.

The basic steps that need to be taken after modernization money becomes available on October 1, the beginning of a fiscal year, are shown in Attachment C. We would ask you to keep in mind that at each of these steps along the way, a complex set of HUD approvals is required, entailing substantial delay.

Even so, Figures 3 and 4 in Attachment "C" show that, fiscal year after fiscal year, approximately 70% of the modernization money made available by Congress has been spent within four years of the start of the fiscal year (October 1) for which it was appropriated. Since it generally takes HUD at least sixteen months after the start of the fiscal year to sign a contract providing the funds to the PHAs, this means that PHAs spend 70% of their modernization money within two years and eight months of the time it becomes available to them. PHAs have maintained this rate of spending even for funding appropriated for years such as FY83 when the total amount of modernization money increased sharply.

It is true that during FY86 and FY87 the total amount of money spent by the PHAs dropped slightly from prior years. This is perfectly understandable, since the amount of money in the pipeline dropped during that period: FY84 and FY85 appropriations were much lower than the FY83 level. The figures in the attachment to this testimony show, however, that each year the amount of money spent by the PHAs, as a proportion of the amounts available to the PHAs for such expenditures, has stayed virtually constant at just under 40%.

Mr. Chairman, this shows that the PHAs can spend the money when provided, notwithstanding HUD's annual statements to the contrary.

If money is not used by a PHA, that doesn't mean that the system as a whole can't absorb the money, but only that HUD staff should behave as managers and see that the PHAs implement their programs expeditiously. Else, HUD should take it away and give it to somebody who can. Also, to state the obvious, there are many PHAs that go unfunded or underfunded each year, or that have to do two- or three-stage modernization, because there isn't enough money. So it's not true to say that the system can't absorb any more money.

CLPHA continues to believe that there must be ways of speeding up the initial 16-month time period it takes before contracts (or amendments) are signed between HUD and the PHA providing PHAs the modernization money. Especially now that

PHAs have turned in 5-year plans to HUD, and these plans will become the basis for a multi-year modernization strategy and timetable with mutually agreed-upon priorities between HUD and the PHA, we see no reason why this period shouldn't be able to be reduced to ten months.

Lead-based paint.

The Housing Act of 1987 laid down new statutory requirements for the testing and abatement of lead-based paint problems in public and private housing. HUD has reacted in panic and confusion to these new requirements. In March 1988, HUD issued a notice which totally changes the priorities for the use of 1988 CIAP funds. The notice was effective on March 4, the date that preliminary applications for these funds were due at HUD. In fact, the notice didn't get out to the PHAs until several weeks later.

Aside from the administrative turmoil this creates, with HUD regional and field offices across the country interpreting this guidance differently, the real problem is that the Notice mandates that PHAs immediately begin enormous lead-paint testing and abatement programs that are likely to increase the health hazards to children.

HUD has also proposed an amended lead-based paint rule, Comments were due April 29. We and other groups submitted objections to this new rule.

These are major issues for us. We want to get everybody working together in realistic directions, with the urgency this matter deserves; but we need your help in de-railing HUD's misguided attempt to redirect the use of the 1988 CIAP money. For example, public housing could be included in the 18-month pilot program to be carried out for other kinds of housing programs.

Unless these issues are thought through more carefully, there is a very substantial danger that large amounts of CIAP money will be wasted, if PHAs are forced to immediately start carrying out poorly-planned LBP testing and abatement programs on a nearly universal basis.

Major reconstruction.

The results of CLPHA's recent modernization research show that in the PHAs' own plans, 3.5% of the public housing units are considered "high needs, potential viability problems, but no major redesign needed"; another 2.5% are considered "high needs, potential viability problems, major redesign needed"; and yet another 2.4% are being considered for demolition. [For more detail, see Attachment D.]

CLPHA's efforts to study and identify these problems are only a small first step. Much more needs to be done. HUD should gear itself up for this major task.

As a part of the HUD/Abt modernization needs study, there was an in-depth analysis of 75 public housing projects where the PHAs said major redesign was needed. Someone needs to look at the results of that analysis, focus intensively on what needs to be done about this issue, and issue a series of recommendations accordingly. We don't see this anywhere on HUD's research agenda. Shouldn't it be there?

Development.

The new development program has been reduced to a trickle. The pipeline is almost empty. As a result, the pipeline of people waiting for housing assistance is clogged. There are over a million households on the waiting list for public housing in the nation as a whole. In my city, Wilmington, the vacancy rate is under one percent in private market rental housing, and housing available to low-income households is virtually unobtainable.

We ask you, therefore, to maintain some national capacity for further public housing development. Keep the skills up, both at the PHA level and at HUD.

The massive expiring use crisis shows once again the usefulness and value of the publicly owned housing approach.

Everybody should recognize, too, that expiring Section 8 certificates as well as pre-payments of HUD-subsidized housing will have a dramatic impact upon public housing. Examinations have shown that these tenants often get displaced because they can't afford to stay, and end up on the public housing waiting lists.

I have included in Attachment E some of CLPHA's principal concerns about the current Section 8 certificate and voucher programs.

Public Housing Homeownership.

In closing, I would like to say something about the "privatization" and "public housing homeownership" proposals that have been devised by HUD and other groups such as the Linowes Commission. Mr. Chairman, these are nothing more than cynical deceptions aimed at reducing federal support for housing for the poor. The authors of these proposals know that they won't work, and that poor people can't solve all of their housing problems alone. It doesn't take a brilliant sociologist to tell you why. It's because they don't have enough money!

The vast majority of public housing residents simply cannot afford the annual operating costs of homeownership -- such as utilities, maintenance, insurance and taxes -- even if the units were sold to them at substantial write-downs in the purchase costs -- or even if they were given to these households free!

Please recall that current statute limits the incomes of current public housing residents to no more than 50% of the area's median income. Even households with incomes far higher than this have severe difficulty in becoming homeowners.

In addition, there are many public housing units that are unsuitable for homeownership because they are in poor condition -- yet HUD proposes very little modernization for such units before they would be sold.

Yes, we do have some single-family scattered site units in Wilmington in good condition. Could they be sold? No question about it. They're desirable and they're attractive. But the tenants who could afford them are already our highest-income tenants (and not necessarily the ones who are currently living in the units now, either -- so there would be displacement involved if they were sold). I don't believe it's fair that a few better-off households should be singled out and given the additional federal "largesse" of a steeply written-down or free housing unit. In Wilmington, we use these units as "rewards" or "incentives" for households who have lived in our regular public housing developments for a long time, and who have developed good records of responsible occupancy. They are irreplaceable, and we can't afford to lose them from our low-income housing stock.

Once again, Mr. Chairman, we deeply appreciate your efforts, for public housing and for each of us, as we strive to meet the housing needs of the poor in our communities. Thank you and farewell.

SUMMARY: CLPHA RECOMMENDATIONS FOR PUBLIC HOUSING APPROPRIATIONS:

Operating Subsidies:	
- FY88 shortfall	$138 million
- FY89 need	$1.750 billion
Modernization (CIAP) FY89	$2.500 billion
Development/Major Reconstruction (FY89)	$500 million

ATTACHMENTS

A) Comparison of results of Abt modernization needs study and figures shown in HUD policy paper. (Figure 1)

B) Summary of results of CLPHA survey of public housing modernization needs. (Figure 2)

C) Modernization money expenditure rates. (Figures 3 & 4)

D) Major reconstruction needs (CLPHA survey).

E) CLPHA concerns: Section 8 certificates & vouchers.

ATTACHMENTS TO TESTIMONY OF MARY ANN RUSS, EXECUTIVE DIRECTOR OF THE WILMINGTON (DE) HOUSING AUTHORITY, ON BEHALF OF THE COUNCIL OF LARGE PUBLIC HOUSING AUTHORITIES (CLPHA), BEFORE THE SUBCOMMITTEE ON HUD-INDEPENDENT AGENCIES, COMMITTEE ON APPROPRIATIONS, U.S. SENATE, MAY 10, 1988.

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Attachment A: Comparison of results of Abt modernization needs study and figures shown in HUD Policy Paper.

Attachment B: CLPHA survey of public housing modernization needs.

Attachment C: PHA Ability to Spend Modernization Funding

Attachment D: Major Reconstruction Needs

Attachment E: Section 8 Certificates and Voucher

Figure 1

ATTACHMENT A

COMPARISON OF RESULTS OF ABT MODERNIZATION NEEDS STUDY AND FIGURES SHOWN IN HUD POLICY PAPER.

	$ millions	
	Abt	HUD
FIX	$9,307	$9,307
ADDS [ISO = 1 + 2 only]		
(a) required by code or modernization handbook standards (for health and safety or systems integrity) ("mandatory ADDs")	$881	$881
(b) project specific	$5,471	0
(c) Energy conservation:	$1,086	0
(d) Handicapped accessibility	$55	$259
MAJOR REDESIGN:		
Net of FIX: $2.06 BILLION		
CLPHA est. Net of ADDS:	$1,030	0
INDIAN HOUSING (not incl. homeownership)	$502	$210
LEAD-BASED PAINT	$446	$446
TOTAL OF ITEMS SHOWN ABOVE:	$18,778	$11,103
Other HUD adjustments:		
Indian homeownership FIX		$89
"Mandatory portion of 'other adds'"		$42
Turnkey 3 and Section 23		$230
Admin. Costs @ 9.8%		$1,122
Deduct pipeline funds already available but unspent as of the time of inspections		($1,509)
Deduct 73,500 high-cost or problem units:		($1,862)
TOTAL, NO MORE THAN:		$9,215
Deduct up to 95,300 units triggering a viability test.		($1,759)
TOTAL, NO LESS THAN:		$7,456

For the conventional public housing stock where no REDESIGN or lead-based paint abatement is needed, these basic needs shown in the Abt study (but not the HUD document) would be as follows:

FIX:	$7,392 per unit
ADDs (ISO 1+2 only):	$5,952 per unit
Total, for the above only:	$13,344 per unit

The Abt study strongly indicates that the items HUD has subtracted are in fact needed, and that the true need is therefore at least $18.6 billion (less funding in the pipeline). This need could be met in 8 years with an annual appropriation of $2.3 billion (assuming no inflation).

Each year, additional needs will accrue, and these, too, should be funded in order to prevent another buildup of backlog needs. HUD's study of accrual, originally part of the Abt study, has been contracted to the firm of ICF, and is due for release this spring. There are no current estimates available on the rate of accrual of new needs, but when they become available these will have to be added in.

HUD's interpretation of Abt Study. Based on its own 'policy interpretation' of the Abt study, HUD claims that the true need is only $7.5 billion. HUD deducted from the Abt results the following items:

(1) Project-specific ADDS-- $5.5 billion. These are items which are allowed, but not required, by HUD's modernization handbook. Approval is to be determined by the HUD Field Offices on a case-by-case basis, whenever these items are proposed by a PHA.

There were $5.5 billion worth of such items where the independent inspectors either "strongly agreed" or "agreed" that the item was needed. Throughout the study, both the staff of HUD's Office of Policy Development and Research, and the staff of the Office of Public Housing, repeated the claim that HUD did not think, and would never say, that such items were generally "not needed" just because they involved some discretionary judgement.

Unfortunately, however, when HUD stated its position in recent hearings before this Committee on the Department's FY 89 budget proposals, HUD took a totally new and unexpected line, namely that in the future HUD should fund only the mandatory items in the handbook, plus lead paint abatement, using federal modernization funds; and that if mandatory items were not enough to ensure viability, too bad, the PHA would have to look for additional funds elsewhere.

(2) Energy conservation-- $1.1 billion. These are items which would make public housing developments more energy efficient. In the long run they would be likely to save money. HUD ruled them out.

(3) Major Redesign-- $1.0 billion. Abt looked at a sample of 75 developments with high needs where the PHAs indicated that major redesign would be desirable in order to ensure long-term project viability. The architect/engineer teams determined that over $2.0 billion would be needed (in excess of "FIX" expenditures) to upgrade and redesign these developments for the nation as a whole. (Some of this money was included in the project specific adds, and CLPHA estimates that only $1.0 billion represents additional needs, net of ADDS.) Again, HUD's position is that only mandatory items should be repaired. Even if a development has been shown to need major redesign in order to make it viable, HUD does not want to fund such work.

(4) High cost or problem units-- $1.9 billion. HUD estimates that 73,500 units are not worth repairing due to high costs or other severe problems.

HUD has provided no explanation of the source for the 73,500 figure. We would like to request that this Committee press the Department for an explanation of exactly how HUD came up with the number 73,500. Based upon CLPHA's surveys, we think that the number of such 'high needs units' (excluding those where Major Redesign or demolition is needed) is less than half the number shown by HUD.

There is no reason to assume that all high cost developments are severely troubled and not worth repairing. The CLPHA survey found that over half of the developments with over $20,000 per unit modernization needs had vacancy rates below 5% and had no trouble passing HUD's viability test.

Also, since it is likely that many of these developments would need major redesign and were included in Abt's number for major redesign needs (which was already ruled out by HUD), HUD has probably deducted at least part of the need for these units from the Abt total twice, once under major redesign needs and then again here.

(5) Units which may trigger viability test-- $1.8 billion. On the assumption that these units might not be worth fixing, HUD has suggested that the cost of repairing 93,500 additional units could possibly be deducted from the total needed. Again, HUD's calculation suffers from several problems.

Many units which trigger a viability review are worth rehabilitating. Twenty-five percent of the units in the CLPHA survey which went to the final stage in HUD's viability review (requiring a field office inspection) are currently undergoing modernization work which HUD and the PHAs both believe will make the developments viable. Many of these units were probably included in the Abt figure for major redesign, so that the cost for their repair has been deducted from the Abt total twice.

Perhaps the greatest problem with HUD's deducting the needs of the above two groups of units -- those with high costs and those triggering a viability review -- is that no consideration has been given by HUD, in this decision, to whether or not these units are needed to serve low-income households in their communities. Only some undefined standard of 'high cost' has been used to make this decision. What is 'high cost'?

If a vacant unit can be modernized at say $30,000 to provide standard housing for a low-income household, isn't this likely to be the most cost-effective way of doing the job? Yet this level of need is probably what HUD considers to be 'high cost'. Channelling funds only into low needs developments would be at the expense of worsening the housing shortage in many cities where it is already greatest.

Attachment B: CLPHA Survey of Public Housing Modernization Needs. CLPHA obtained estimates of modernization need from 41 large PHAs which manage 30% of the nation's public housing units. These estimates were based mainly on the PHAs' Comprehensive Five-Year Plans for Modernization, which were mandated by HUD in 1985 and generally completed in the summer of 1987. PHAs also provided to CLPHA estimates of any needs which were not included in their plans.

The per unit distribution of needs found in the CLPHA survey is shown in Graph 1. The median need per unit was $9,084. The mean need per unit was $12,233. Thirty one percent of the units needed less than $5,000 in modernization funds. Fifty four percent of the units needed less than $10,000. Only twenty percent of the units needed more than $19,500 per unit.

Based on this information, CLPHA estimated the nation's total public housing modernization needs by multiplying the mean (excluding New York and Chicago) by the total number of units nationwide (again, excluding New York and Chicago) and adding separate estimates for these two PHAs. The results are as follows:

All units except NYC and Chicago:	$13.5 billion
New York	$2.3 billion
Chicago (est. $18,000/unit)	$0.7 billion
Total	$16.5 billion

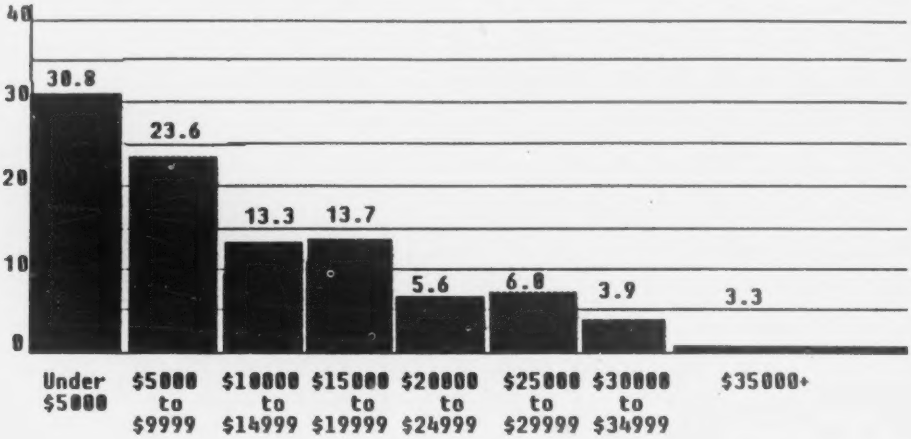
If many PHAs underestimated the needs of their highest need developments (e.g. out of fear of lack of funding), the CLPHA survey would underestimate total needs. For discussion purposes, a rough estimate could be made that, excluding New York City and Chicago, the developments with needs of over $20,000 per unit have an additional need of $10,000 per unit. This would add an additional $2.1 billion, increasing the total to $18.6 billion.

Figure 2
CLPHA Modernization
Survey

Percent of Total Units in Survey in Each Category of Modernization Need

Based on 41 Large PHAs with 226,040 units, excluding New York and Chicago, as of March 7, 1988

Source: CLPHA survey.



Total Units	226,040
Median	$9,084
Mean	$12,233
Mode	Under $5,000
80th Percentile	$19,517

Attachment C: Rates of Expenditure and Obligation for CIAP Funds

In support of its annual claim that the modernization pipeline is clogged, HUD often issues two types of data on PHA expenditure and obligation rates for modernization funds: the first looks at the PHAs' expenditure of funds from each fiscal year separately; and the second looks at the aggregate amount of funds obligated (put under contract) by the PHAs regardless of fiscal year. Both sets of data show that funds have been expended and obligated at about the same rate during all CIAP years. HUD asserts that this means that the pipeline cannot handle more funds than this. This is a simplistic conclusion unsubstantiated by HUD's own figures.

Expenditure rates by separate fiscal years. CLPHA has used the most recent HUD data available (through June of 1987) to graph the PHA expenditure rates of CIAP funds for each fiscal year's appropriation separately (see graph 2). These graphs show that the proportion of funds spent by PHAs occurs over time at roughly the same rate, for modernization funding appropriated in each fiscal year, 1981 through 1985, despite variations in the amounts appropriated each year or in the amount of money already in the pipeline. To illustrate more specifically, fiscal year after fiscal year, PHAs taken together have spent approximately 70% of the modernization money appropriated for a fiscal year, within exactly four years of the beginning of the fiscal year for which that money was appropriated -- regardless of the amount appropriated.

The highest appropriation ever (FY83) was spent at the same rate (in proportional terms) as a much lower appropriation(FY84). The unusually high amount of funding in FY83 did not slow down the expenditure of the funds. Nor was the expenditure of funds slowed down by the accumulation of funds in the pipeline: the PHAs appear to have spent the FY84 and FY85 money at about the same rate as the FY81 money, even though there was a good deal of money in the pipeline in FY84 and FY85, and almost none in FY81.

(Note: it is still too early to tell if FY86 or FY87 money is being spent at the same rate)

Aggregate obligation rates.

HUD has also compiled data on the aggregate obligation of funds, regardless of the fiscal year in which they were appropriated. This data shows that the amounts obligated each year have been decreasing recently. However, CLPHA's analysis shows that these amounts have stayed the same, proportionally, relative to the amounts in the pipeline actually available for the PHAs to spend.

Even if the PHAs did obligate less money in a recent year than in an earlier year, this is meaningless unless we know how much money the PHAs had available to them. If there was less money available, then we would naturally expect lower obligations.

In fact, the PHAs have had lower amounts available to them recently (since the large FY 83 appropriation has mostly been spent), and lower aggregate obligations are the natural result. The ratio of money obligated by the PHAs to money in the pipeline has remained constant.

Attachment C (cont.): Steps in the Process of Allocating and Spending Public Housing Modernization Funds.

Fiscal Year Begins	October 1
Notice of funding availability by HUD	February
PHAs submit applications	March
HUD reviews applications	
HUD obligates funds to individual PHAs	September 30
HUD & PHA sign a contract for the funds (or an amendment to a prior contract)	February
PHA contracts for architect and/or engineering services to do detailed designs and plans for the project	
Based upon these designs and plans, bid specifications are prepared and the project goes out to bid	
Winning bid(s) are selected, often after negotiations and modifications	
Contracts for the work are signed	
The work is carried out	
Partial payments are made as the work progresses	
The work is completed	
The final payment is made, sometimes after extensive delays while the PHA argues with contractors and tries to achieve full compliance with the contract terms.	

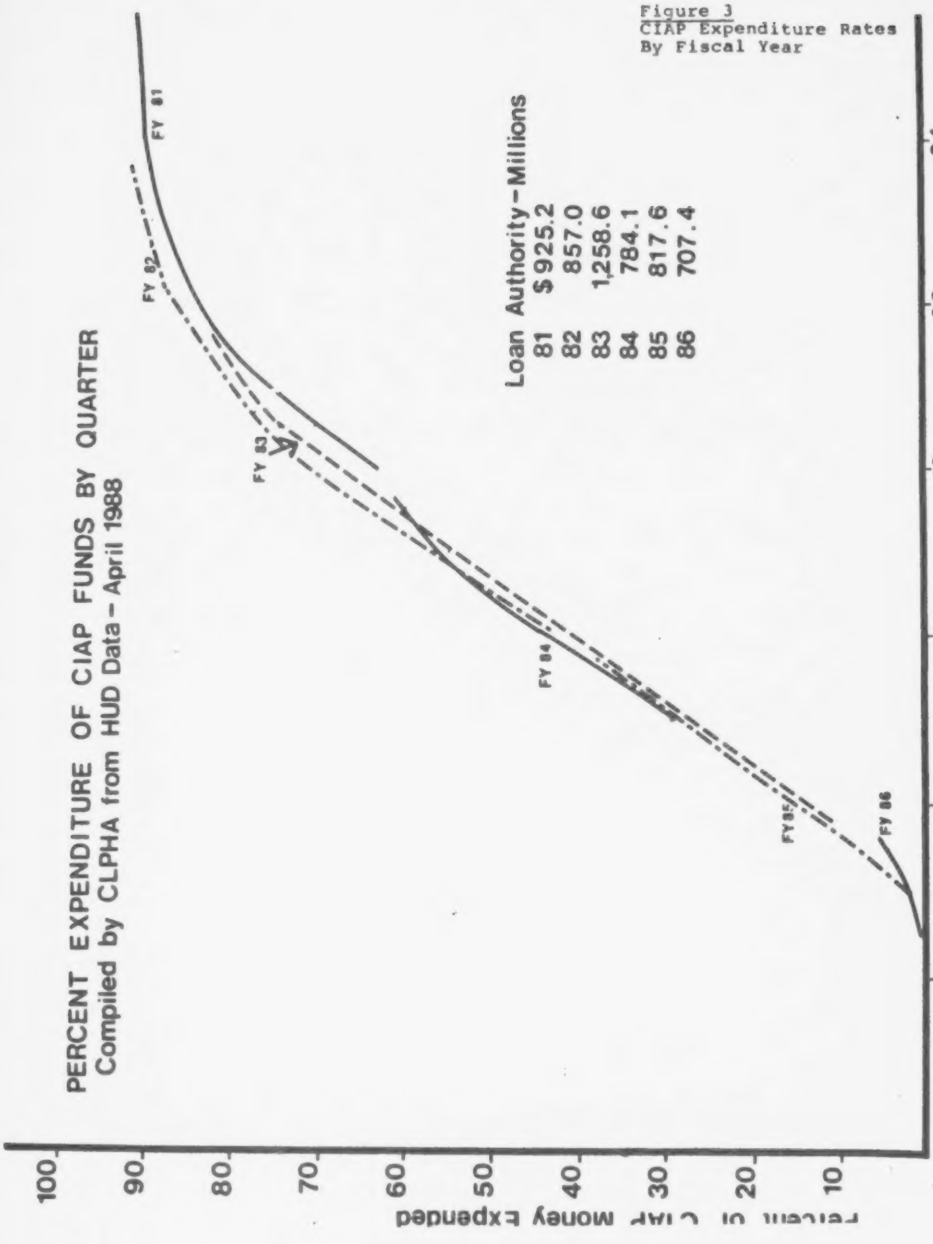
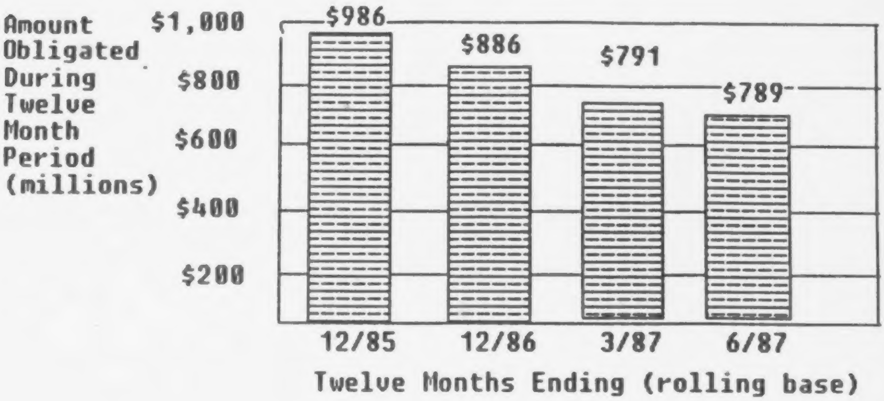


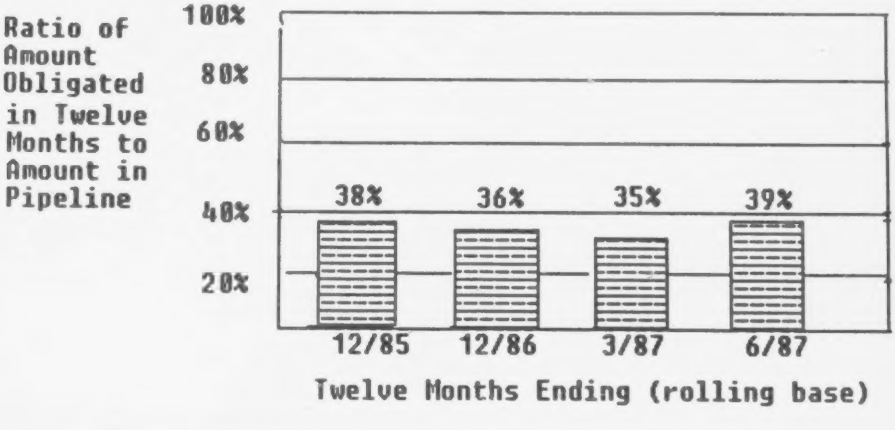
Figure 3
CIAP Expenditure Rates
By Fiscal Year

Figure 4
CIAP Aggregate
Obligation Rates

HUD is correct that the aggregate annual amount obligated in recent years has been decreasing, as shown below:



However, the total amount obligated is meaningless as far as making a judgement about PHAs' ability to spend money. The important indicator is the amount obligated relative to the amount PHAs could potentially obligate, ie. funds in the pipeline. CIAP funding levels have varied greatly, and in any given twelve month period PHAs have had different amounts available to them to obligate. The following bar graph shows that the relative amount obligated has remained constant from calendar 1985 through June 1987:



(Note: amount in pipeline is defined as total amount appropriated for all FYs as of the beginning of the 12 months, minus funds already expended at that time.)

Attachment D - Major Reconstruction Needs.

There are some seriously deteriorated public housing developments with extensive modernization needs which cannot be met through CIAP as presently structured. The modernization of these developments is extremely important because, despite their small numbers, they receive a good deal of publicity, tarnishing the image of the otherwise successful public housing program. To meet this need the major reconstruction program should be retained and expanded.

Using the results of its own modernization survey, CLPHA established three separate definitions of seriously troubled developments. The following table shows the percentage of units in the survey which fell into each of the three categories, and what that would mean for the nation as a whole if the national percentage distribution figures were the same as for the CLPHA survey results.

Definition	HIGH NEEDS, POTENTIAL VIABILITY PROBLEMS		TOTAL DEMO
	No Major Reconfiguration	Major Reconfiguration	
% of units in survey	3.5%	2.5%	2.4%
% of PHAs that reported having developments in this category	36%	36%	18%
Avg. number of units in a development in this category.	248	408	526
Avg. mod. need (per unit) for a development in this category.	$33,632	$31,093	$7,381
Number of units nationwide (est.) excluding NYC and Chicago. (Base = 1,106,428)	38,724	27,661	26,554

The average cost per unit is slightly lower for the "major reconfiguration" category than for the "no major reconfiguration" category. This is because some of the "major reconfiguration" developments include a good deal of demolition, which is much cheaper than rehab.

Attachment E - Section 8 Certificates and Vouchers.

The following is a summary of just a few of CLPHA's concerns about Section 8 certificates and vouchers.

First, budget authority for thousands of fifteen-year certificates is due to expire beginning in 1989. CLPHA believes that expiring certificates should be replaced one-for-one by new certificates (not vouchers), except in areas where PHAs can demonstrate that they are not needed.

Second, the existence of two separate rental assistance programs is making program administration needlessly difficult. PHAs must spend large amounts of time explaining the differences between the programs to landlords, tenants and even PHA staff. CLPHA recommends that the two programs be merged into one as soon as the final results of Abt Associates' evaluation have been completed and evaluated. In general, the Section 8 certificate program should largely be retained as it is -- one of the most successful housing programs in the nation's history -- and modifications (such as slightly greater flexibility in terms of rent levels) should be made only when proven to be advantageous by the voucher demonstration.

The preliminary indications of the Interim report on the evaluation of the voucher demonstration (by Abt Associates) are that vouchers cost more for both tenants and the government, while providing little in the way of benefits; at the same time, rent-income ratios for tenants were greatly increased on the average. Specifically, the study found that:

- 25% of voucher tenants pay more than 40% of income for rent.
- On the average Vouchers cost the government $23 more per unit per month than certificates.
- The average voucher rent is $32 more per month than the average certificate rent.
- Despite higher subsidies and rents for vouchers, the success rates for the two programs are equal.
- There are more certificate rents than voucher rents below FMRs. This suggests that the "shopper's incentive" is not inducing tenants to economize in rent. In fact, several PHAs report that only tenants who rent in place have benefitted from the "shopper's incentive," while movers, whose pre-program housing is usually worse, have not normally been able to find units below FMR.

These preliminary findings suggest that there are serious flaws in the voucher program, and that a future single program should predominantly contain most of the features of the certificate program.

STATEMENT OF ELEANOR KOHN, CONSORTIUM FOR CITIZENS WITH DEVELOPMENTAL DISABILITIES

PHOTOGRAPHIC EXHIBIT

Senator PROXMIRE. Ms. Eleanor Kohn as the vice president for public policy of the National Mental Health Association represents the Consortium for Citizens with Developmental Disabilities.

Ms. Kohn, you may proceed.

Ms. KOHN. Thank you, Senator Proxmire. Before I proceed, I would like to ask one of our staff people to give you copies of a homeless in America photographic exhibit that has been put together with the help of the association and with the assistance of four spouses of Senators: Mrs. Gore, Mrs. Domenici, Mrs. Hollings, and Mrs. Leahy. It is a searing exhibition of what homelessness means in this nation.

Senator PROXMIRE. I might say that Senator Leahy is on this subcommittee, and he will probably be chairman of the subcommittee next year. Senator Domenici is on the subcommittee, also.

Ms. KOHN. We are aware of that. That is one of the reasons I was smart enough to bring this.

Senator PROXMIRE. We have all sorts of Senators on the committee.

SPECIAL HOUSING FOR SEVERELY DISABLED

Ms. KOHN. I among going to highlight some of our essential points. Many of the people with disabilities that we are here to talk with you about are painfully poor, and they are dependent upon federal funding to meet their needs. Approximately $7.9 million persons in the United States are considered to have severe disabilities and many, if not most of these people, have needs for special housing.

The inadequacy of housing options for people with disabilities has contributed to a staggering problem of homelessness, especially for those people with mental illness. According to the National Institute of Mental Health, approximately one-third of the homeless population of this country are considered to have some form of mental illness, and they are generally among the most vulnerable and disabled of the homeless population and, of course, of particular concern to us.

Additionally, the unimaginable stress of being homeless serves to exacerbate illness in many of those who, under more liveable circumstances, might be less susceptible. This lack of affordable housing is a serious problem throughout the nation.

But for those who are disabled, it is absolutely devastating. It is, therefore, with great concern that we have observed the continuing drastic decline in federal appropriations for assisted housing. I heard the term, I heard the figure 75 percent decline in the past 7 years.

INSTITUTIONAL CARE RESULTING FROM LACK OF HOUSING

For disabled people who have been denied access to community-based housing alternatives, the only alternate choice for them is frequently inappropriate and expensive institutional care, much of which is supported by federal dollars.

There are estimates that over 300,000 people with handicapping conditions are unnecessarily institutionalized because of the lack of affordable and appropriate housing.

I suggest that society just cannot look the other way and ignore the fact that thousands upon thousands of citizens, many of whom are painfully disabled, are sleeping in the streets. We need to provide affordable and accessible housing to our most at-risk citizens, and the cost of not doing so demands continued and valuable federal support.

Last year, Congress responded by authorizing a new supportive housing demonstration program in the Stewart McKinley Assistance Act. We are especially supportive of the long-term preventive components of the permanent program of that act.

Permanent housing can mean the beginning of independent living, of employment, and of the opportunity to become productive members of society, despite disabling conditions. Therefore, we recommend that the fully authorized amount of $105 million that is in the bill be appropriated; that the additional $40 million over last year's appropriation level be targeted for the permanent housing component. Also, the 35—I see the red light.

I would only tell you that the single-room occupancy situation has exacerbated the homeless situation terribly. As a result of the closing down of 1 million single-room occupancy units, we are seeing enormous backups in hospitals and nursing home discharges and frequently, a dumping of patients on the streets to make room for others.

We urge you to take a look at our recommendation which we have already submitted. We think the situation of the homeless, and especially the homeless who are disabled, is a shame that our nation cannot afford to live with.

We thank you for what you have been able to offer us in the past and we hope you will be able to offer us again consideration of this legislation.

SUPPORTERS' LISTING

Senator PROXMIRE. Thank you very much, Ms. Kohn. I might point out that on your list, I notice your honorary patron is Barbara Bush, the Vice President's wife, and that Irma Byrd is co-chairman, the majority leader's wife; Betty Wright, I take it, is the Speaker's wife.

Ms. KOHN. Right.

Senator PROXMIRE. Tipper Gore, Senator Gore's; Sue Baker; is that the White House Chief of Staff's daughter?

Ms. KOHN. No; his wife.

Senator PROXMIRE. His wife.

And Mitch Baldrige, the former Secretary of Commerce's wife; Nancy Domenici, P.C. Hollings, of course, Fritz Hollings' wife; Marcel Leahy, as you pointed out; Jean Rather, is that the wife of Dan Rather?

Ms. KOHN. Right.

Senator PROXMIRE. Elizabeth Rukreiger; that is Wall Street Week, Louie?

Ms. KOHN. No; that is her brother-in-law; that is Bill's wife.

Senator PROXMIRE. I am tremendously impressed anyway. With that kind of support, you don't need any federal money. [Laughter.]

Thank you very much.

Ms. KOHN. They have been willing to give us their support but not their dollars.

Senator PROXMIRE. I am afraid, I hope we are not that way.

Ms. KOHN. Thank you for listening to us.

[The statement follows:]

STATEMENT OF ELEANOR KOHN, VICE PRESIDENT FOR PUBLIC POLICY, NATIONAL MENTAL HEALTH ASSOCIATION, ON BEHALF OF THE CONSORTIUM FOR CITIZENS WITH DEVELOPMENTAL DISABILITIES

As Vice President for Public Policy of the National Mental Health Association, representing the Consortium for Citizens with Developmental Disabilities, I appreciate the opportunity to share our concerns with you on maintaining and expanding the housing resources available for people with disabilities. I would also like to thank you for your continued support in funding the programs which are so vital to meeting the residential needs of people with disabilities.

The Consortium for Citizens with Developmental Disabilities (CCDD) is a working coalition comprised of fifty consumer, provider and professional organizations which advocate on behalf of people who are developmentally disabled. The CCDD has been in existence since 1973, advocating for this population in a variety of areas including the appropriation of sufficient federal funding to assure that our nation's citizens with disabilities can access adequate housing.

Many of the people with disabilities represented by our organizations are poor and are dependent upon federal funding to meet their needs. People with disabilities need the maintenance and continuance of the federal presence that is not being provided by states and localities and the private sector.

Approximately 7.9 million persons in the United States are considered to have severe disabilities. These are people who are unable to conduct some major activity of daily living. Many, if not most, of these individuals require some special accommodation in housing. There are long waiting lists for most of the more than 15,000 community residential facilities for persons with developmental disabilities across the nation. For years, there have been people waiting for affordable and accessible housing in virtually every city and locality across the country.

Securing appropriate housing is a major prerequisite to social integration and living independently for persons with disabilities, yet after more than a quarter century of federal involvement in developing specialized housing designed to meet the unique needs of these populations, people with handicaps continue to be among the most inadequately and inappropriately housed segments of American society.

Available data suggest that the costs of providing appropriate housing options for people with disabilities are well worth the investment because of the significant saving that may be engendered by enabling people with disabilities to live in the community, get jobs, and pay taxes. The lack of appropriate housing opportunities for individuals with disabilities frequently results in the unnecessary and expensive institutionalization of such persons usually with the support of federal dollars. There are estimates that over 300,000 persons with handicapping conditions are unnecessarily institutionalized due to a lack of appropriate housing arrangements.

The inadequacy of housing options for people with disabilities has contributed to a growing problem of homelessness, especially for people with mental illness. Although there are no reliable national surveys, it is estimated that the number of homeless persons in this country ranges between 250,000 (U.S. Department of Housing and Urban Development) on any given day to 3 million (National Coalition for the Homeless) persons during the course of year. According to the National Institute of Mental Health, approximately one third of the homeless population are considered to have some form of mental illness. They are generally among the most vulnerable and disabled of the homeless population and are of particular concern to us. This population, unlike those who are temporarily traumatized by being homeless, risks the regression of serious long-term disability and sometimes death on the streets.

Federal Programs

The need for the federal government to continue to be actively involved is clear since the private sector simply has not produced enough affordable housing, especially units designed with the supportive living environments necessary to assure that the elderly and handicapped can maintain their highest level of independent living. These supportive living environments include specialized features such as grab bars, extra wide doorways, and high intensity lighting, coupled with appropriate services which are either too costly or simply not available in existing housing.

Although the Section 202 program is the federal program which has most visibly contributed to expanding housing options for people with disabilities, there are many other ways in which HUD initiatives are assisting people with handicaps living in the community. For example, the Community Development Block Grant program has been helping organizations rehabilitate rental housing to meet the accessibility needs of tenants with disabilities. The Section 232 Mortgage Insurance Program is beginning to be more instrumental in helping to leverage private financing for specialized housing. In the arena of direct subsidies, people with disabilities have been entering a housing market less restrictive than the traditional group home alternatives by participating in the Section 8 Rent Assistance Program and by utilizing public housing.

The Congregate Housing Services Program has been a unique initiative to assure that those living in HUD facilities in the community will have the support necessary to keep them out of institutional settings. We urge the Committee to assure full funding of this program at $10 million now that it has been permanently authorized in P.L. 100-242.

Access to community-based housing alternatives, besides offering persons with disabilities the opportunity for more normalized and integrated living situations, frequently also results in a lessening of federal support dollars required for institution-based care. It is therefore with great concern that we have observed the continuing drastic decline in federal appropriations for assisted housing, by most estimates, over seventy percent during the last seven years.

Our coalition recognizes the current budget restrictions imposed by the serious ongoing deficit problems. However, the increasing problems of homelessness and the need to provide affordable housing to our most at-risk citizens, demands continued and viable federal support. Therefore, CCDD recommends current service level funding in the assisted housing programs, and in the Community Development Block Grant. For Section 202, this would mean assurance of the availability of 12,000 new units for fiscal year 1989. We urge the Committee to continue the twenty-five percent set aside for projects for people with disabilities as was approved during conference efforts last year. This Housing and Community Development Act of 1987 recognized that the handicapped portion of the Section 202 Program was burdened by inappropriate and often restrictive regulations. Besides mandating the development of new guidelines for projects for people with disabilities (guidelines HUD has yet to begin developing), the Act also authorized a new subsidy mechanism. Therefore, it is necessary to transfer from Section 8 the funds to be obligated for fiscal year 1989 handicapped projects. In addition, P.L. 100-242 authorized assistance for pipeline projects which are experiencing problems because of cost containment and inadequate Fair Market Rents. Funds must be made available from the Section 202/Section 8 amendment resources to address this requirement.

In order for these important changes to have an impact in the FY 1989 funding cycle, the regulatory negotiation process must begin as soon as possible.

Addressing the Housing Needs of Homeless Handicapped People

As people with disabilities have emerged in growing numbers among the homeless population, CCDD is becoming increasingly concerned that housing and service programs be developed with their special needs in mind. Congress responded last year by authorizing a new Supportive Housing Demonstration Program in the Stewart B. McKinney Homeless Assistance Act.

This new program incorporates a Transitional Housing Demonstration and program for Permanent Housing for Homeless Handicapped People. The transitional component is intended to facilitate the movement of homeless individuals, including those with disabilities, to independent living within a reasonable amount of time by providing temporary housing and services to assist them in obtaining entitlements, mental health services and other necessary care.

The Permanent Housing component is designed to remedy the capital shortage of affordable housing for people with developmental disabilities through matching grants for the acquisition and rehabilitation of properties to serve as permanent housing for homeless handicapped persons. Only states may apply for grants under this program, and states may then pass on the federal funds to public or private non-profit project sponsors. Projects may include a wide range of supervised or unsupervised small permanent housing options for handicapped persons.

The union of Federal matching grants which leverage state and local matching funds, tenant rental payment and state and local support services, creates a viable approach to expeditiously providing homeless handicapped individuals with stable and dignified residential environments conducive to independent living, employment, and reintegration in the community.

CCDD is especially supportive of the long-term, preventative components of this program. Permanent housing provides a much needed opportunity for disabled people to enjoy satisfying lives in the community.

We recommend that the fully authorized amount of $105 million that is in the bill (H.R. 4352) reauthorizing the Stewart B. McKinney Homeless Assistance Act, be appropriated, with the additional $40 million over last year's appropriation level being targetted for the Permanent Housing program.

Also, the $35 million that was made available last year through the Stewart B. McKinney Homeless Assistance Act for Section 8 Assistance for Single Room Occupancy Dwellings has been a useful source of funding for people with mental disabilities. For example, through a blend of federal, state, non-profit and private cooperation, in just a few weeks 14 homeless adults with serious mental illness in Pueblo, Colorado will occupy a building where they will receive regular meals, case management, and monitoring of their medications.

We strongly recommend that you fund this program at $40 million which is the full authorizing amount in the McKinney reauthorizing bill (H.R. 4352).

Mr. Chairman, I want to thank you and the rest of the Committee for the continuing interest you have shown in meeting the housing needs of people with disabilities.

SUMMARY OF CCDD RECOMMENDATIONS

The CCDD Task Force on Housing respectfully submits the following recommendations to the Subcommittee on HUD-Independent Agencies of the Senate Committee on Appropriations:

- An appropriation which will provide 12,000 new units under the HUD Section 202 Direct Loan Program for FY 1989.

- An appropriation of $10 million for Congregate Housing Services in FY 1989.

- An appropriation of $3000.0 million for the Community Development Block Grant in FY 1989.
- An appropriation of $105 million for the Supportive Housing Demonstration Program (authorized in the Stewart B. McKinney Homeless Assistance Act) in FY 1989, with at least $55 million set-aside for the Permanent Housing component.
- An appropriation of $40 million for the Section 8 Moderate Rehabilitation Assistance program for Single Room Occupancy Dwellings in FY 1989.

STATEMENT OF JONI FRITZ, NATIONAL ASSOCIATION OF PRIVATE RESIDENTIAL RESOURCES

Senator PROXMIRE. Our last panel will consist of Ms. Joni Fritz, Mr. Alexander Weir, Mr. John Rother, Warren Lasko, and Scott Sklar.

Ms. Fritz, I understand, represents the National Association of Private and Residential Resources?

Ms. FRITZ. Yes, sir.

Senator PROXMIRE. Ms. Fritz, go right ahead.

Ms. FRITZ. Thank you. Good afternoon, Senator Proxmire. I do represent the National Association of Private Residential Resources, which currently represents more than 650 agencies in 49 states. Together, our members provide residential services for more than 40,000 people with mental retardation and other developmental disabilities.

NEED FOR COMMUNITY LIVING ARRANGEMENTS

We have submitted our full statement for the record with a summary of our recommendations, and those focus on HUD programs that support housing and day programs for the people our members serve. The need for more community living arrangements is tremendous and is increasing each year, but the stock of available, affordable, low-income housing continues to dwindle.

The budget of the Department of Housing and Urban Development has already been cut more severely than that of any other major federal agency, but the administration' s budget for fiscal year 1989 once again recommends that programs that provide permanent housing for people with disabilities be cut.

SECTION 202 DIRECT LOAN PROGRAM

We are seeking a reversal of that trend. NAPRR respectfully asks Congress to appropriate sufficient fiscal year 1989 funding in the HUD section 202 Direct Loan program to support the construction of 12,000 units of housing.

We are also asking Congress to urge HUD to implement amendments contained in Section 162 of Public Law 100–242 that will improve the development of housing designed for people with disabilities under the section 202 program.

We would like to use our time today to supplement our printed testimony focusing in this area. As stated in the 1987 authorizing legislation, quoting Congress, "The development of housing for nonelderly handicapped families is often more expensive than necessary, thereby, reducing the number of such families that can be assisted with available funds. The 202 program can be made more efficient and less costly by the adoption of standards and procedures applicable only to housing such families."

For the last few years, our testimony before this subcommittee has described the frustration experienced by our members trying to build small group living arrangements who must comply with unnecessary requirements designed for large high-rise construction. They are required to provide things like topographical surveys and soil borings, while they are prohibited from including features that could save money over time like brick siding and overhanging roofs that cool a home and reduce maintenance costs.

They are even sometimes required to omit features required by local and national fire safety officials. For example, the president of our association from Ohio was prohibited by HUD from including a second exit from the first floor of a duplex constructed under the 202 program

As stated in our printed testimony, HUD implementation of cost-containment policies seldom results in a less expensive project. The delays and redesign requirements eat up any potential cost savings, and the end result is usually a project that looks more like a temporary military barrack than a home and is an eyesore in the community.

Unless the development of new policies and procedures is expedited, we fear that the regulations will not even be published in time for the changes to be implemented in fiscal year 1989.

In addition to urging HUD to implement the section 162 provisions, our association is also recommending that $10 million be appropriated for the congregate housing services program in fiscal year 1989; $3 billion for the CDBG program, and $140 million for the supportive housing demonstration program, with a $75 million increase over fiscal year 1989 funding targeted for permanent housing.

We thank the subcommittee for listening to our recommendations and urge that they be adopted.

Senator PROXMIRE. Thank you very much, Ms. Fritz.

[The statement follows:]

STATEMENT OF JONI FRITZ, EXECUTIVE DIRECTOR, NATIONAL ASSOCIATION OF PRIVATE RESIDENTIAL RESOURCES

SUMMARY OF NAPRR RECOMMENDATIONS

The National Association of Private Residential Resources (NAPRR) respectfully makes the following recommendations in fiscal year 1989 appropriation levels for programs administered by the Department of Housing and Urban Development. NAPRR recommendations focus on HUD programs that support housing and day program space for people with mental retardation and other developmental disabilities.

- The need for more community living arrangements is tremendous and is increasing each year, but the stock of available, affordable housing continues to dwindle. The budget of the Department of Housing and Urban Development has been cut more severely than that of any other major federal agency. Programs that provide permanent housing for people with disabilities have once again been slated for cuts. NAPRR seeks a reversal of this trend.

- NAPRR respectfully asks Congress to appropriate sufficient FY 1989 funding in the HUD Section 202 Direct Loan Program to support the construction of 12,000 units of housing. This would be the full funding level authorized in the Housing and Community Development Amendments of 1987 (P.L. 100-242).

- NAPRR also asks Congress to urge HUD to implement amendments contained in P.L.100-242 that will improve the development of housing designed for people with disabilities under the Section 202 program.

- NAPRR recommends that $10 million be appropriated for the Congregate Housing Services Program in FY 1989, the full authorization amount. Congressional support last year for this authorization level should be matched by support for full funding for the program.

- NAPRR asks Congress to appropriate $3 billion for the Community Development Block Grant program in FY 1989. This would return the program to FY 1987 appropriation levels and to the full amount authorized under P.L. 100-242. We also urge Congress to reject the President's proposal that qualified localities be limited, and to assure that any expansion in the utilization of CDBG funds be accompanied by adequate appropriations.

- NAPRR recommends that $140 million be appropriated for the Supportive Housing Demonstration Program in FY 1989, with the $75 million increase over FY 1988 funding targeted for permanent housing.

INTRODUCTION

The National Association of Private Residential Resources (formerly the National Association of Private Residential Facilities for the Mentally Retarded) currently represents more than 650 agencies in 49 states and the District of Columbia that together provide residential services to more than 40,000 people with mental retardation and other developmental disabilities. Our members offer a full range of residential services in a variety of settings designed to enhance the development and self-dependence of those served.

Almost 20 percent of our members serve just 6 or fewer people, 24 percent serve 7 to 16, 31 percent serve 17 to 50, 15 percent serve 51 to 100, and 10 percent serve more than 100 people. Most NAPRR members serve people at more than one site. Several of those who serve more than 100 people do so entirely in small community settings. Last year almost half of our members provided us with more specific data regarding the number of homes they operate and the number of persons served in those homes. At that time 295 agencies were serving 18,603 individuals at 1,684 sites; or an average of 11 people per site. Not all of those sites have 24-hour staff supervision.

Many NAPRR members have successfully utilized Section 8 housing assistance payments and the Section 202 Direct Loan program to develop community-based housing for people with disabilities. A few have been fortunate enough to acquire Congregate Housing Services funding to provide necessary support services for some of their clients who live in Section 202 or public housing. Others have been able to use Community Development Block Grant funds to develop housing or sheltered workshops. The new Supportive Housing Demonstration Program has not been in existence long enough to have been utilized by NAPRR members.

People with disabilities often confront more severe difficulties in acquiring adequate living arrangements than those who are not disabled. Many require services in association with the housing to avoid institutionalization in more costly settings that are usually funded entirely at government expense. People with physical disabilities may require barrier-free accommodations that can be provided only with substantial modification of existing housing or through new construction. Standards developed by the National Fire Protection Association to assure that people who live in congregate settings for more than three people will be protected in case of fire are also growing increasingly strict. These life-safety standards also often require substantial rehabilitation or new construction. Together these requirements may necessitate the availability of more funds than are needed by other citizens to access adequate housing, but people with disabilities usually have fewer resources.

The need for more community living arrangements is tremendous and is increasing each year, but the stock of available, affordable housing continues to dwindle. The budget of the Department of Housing and Urban Development has been cut more severely than that of any other major federal agency. Although the President's fiscal year 1989 budget request seems to ask for more HUD funding in FY 1989 than in FY 1988, that is because it includes nearly $2.5 billion for "credit reform." Programs that provide permanent housing for people with disabilities have been slated for cuts.

SECTION 202 DIRECT LOAN PROGRAM

The Section 202 Direct Loan Program currently provides the only capital funding available to some agencies that serve people with mental retardation and other disabilities. Each year the number of nonprofit organizations that apply for Section 202 funds far exceeds the number that receive fund reservations. There are substantial waiting lists for most of the 15,000 to 20,000 community living arrangements developed in this nation for people with mental retardation and other developmental disabilities. Many people with disabilities are living in substandard board and care homes or with parents who are growing too old to care for them. Data collected by the Coalition for Human Needs also show that a surprising percentage of low-income people are disabled, many are homeless.

In the past 10 years, the marked reduction in funding for new loan authority has resulted in a loss of more than 60 percent of the number of new units funded annually. The Administration's FY 1989 budget request would reduce the number of units in the Section 202 program by nearly 40 percent as compared to FY 1987. Even with the newly established 25 percent set aside, projects available for people with disabilities would be reduced by 25 percent from the FY 1988 level. The real loss in housing for people with disabilities would be even greater since the Administration's budget proposes incorporating the newly authorized Permanent Housing Demonstration Program into Section 202. Severe reduction of such a critical program at this time is not in keeping with the Administration's own analysis of the housing needs of people with disabilities, or with the increasing concerns about people with disabilities who are inadequately housed or who live on the streets.

When testifying before this Subcommittee in the past, NAPRR has addressed problems confronted by sponsors of Section 202 housing as a result of HUD cost-containment policies. Those experiences were repeated in the FY 1987 funding cycle. Costs associated with delays caused when HUD rejects housing plans frequently do not result in actual cost savings when the project is finally completed. The costs associated with delay of the project, negotiating a resolution of differences of opinion regarding the needs of those who will use the housing, and redesign costs, often equal or exceed any savings achieved by changing the design. Completed projects are now usually unattractive, looking more like temporary barracks than a family home, and are an eyesore in the neighborhood. Surely this is not the image that the Federal government wishes to project. A compromise must be reached between cost-effective housing and excessive design features that are unnecessary in the provision of community living arrangements. NAPRR is hopeful that the modifications in the Section 202 program mandated by Congress in P.L. 100-242 will result in the future development of less costly housing that is adequate to meet the needs of people with disabilities. It does not appear that HUD is moving very rapidly to implement those provisions, however. Unless the process is expedited, we fear that regulations will not be published in time to implement changes in FY 1989.

NAPRR respectfully asks Congress to appropriate sufficient FY 1989 funding in the HUD Section 202 Direct Loan Program to support the construction of 12,000 units of housing. This would be the full funding level authorized in P.L. 100-242. We also ask this Subcommittee to urge HUD to implement amendments contained in P.L.100-242 that will improve the development of housing designed for people with disabilities under the Section 202 program.

CONGREGATE HOUSING SERVICES

As people with more severe disabilities move into community living arrangements from large, inappropriate institutional settings, there is a growing need for more in-house services. Federal, state and local sources of assistance have declined over the past decade. Services such as meals, transportation, personal care and housekeeping assistance enable people with disabilities to remain, or become, relatively self-dependent, thereby avoiding institutionalization in more costly settings. Support services are essential to keep most specialized congregate housing programs viable. The Congregate Housing Services Program has assured that necessary services would be available to tenants of select Section 202 and public housing projects. One-third of those served by this program in recent years have been people with disabilities.

NAPRR was pleased that appropriations for the Congregate Housing Services Program were increased from $3.4 million to $4.2 million in FY 1988. It must be remembered, however, that the appropriation level in FY 1985 was $4.1 million.

The Administration is once again recommending that this program be terminated. This is despite the fact that Congress authorized FY 1989 expenditures of $10 million for Congregate Housing Services under P.L. 100-242.

This year NAPRR is asking Congress to appropriate $10 million for the Congregate Housing Services Program in FY 1989, the full authorization amount. Congressional support last year for authorizing this level of funding should be matched by support for full funding for the program.

COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM

The Community Development Block Grant Program has been well used by state and local governments in planning and implementing diverse community development. Some of the activities carried out under this program have assisted people with disabilities. The private sector has utilized funding from some communities to acquire and rehabilitate buildings used as apartments and congregate living arrangements. Still more CDBG funding has been accessed to develop workshop and day program settings.

We have already focused on the need for additional living arrangements. Thousands of people with mental retardation and other developmental disabilities are without day programs and training due to the lack of facilities. While many of these individuals live in community residences, others are still living at home with their families. Without daytime programs, many families could not cope with the stress of having a family member who is disabled live at home. The development of day services is an important factor in preventing more costly 24-hour care. CDBG grants have served the community well by supporting the rehabilitation or construction of structures used for housing, workshops and day programs.

Once again the Administration is proposing a reduction in funding for the CDBG program. Appropriations were cut in FY 1988. The President's request would provide funding at 17 percent below the full authorization level. The President is also proposing that the localities that qualify for CDBG funding be limited, and that the program be expanded to include additional categories of utilization. We are concerned about reductions in eligibility, but additional funds should be provided if the program is to grow.

NAPRR recommends that $3 billion be appropriated for the Community Development Block Grant program in FY 1989. This would return the program to FY 1987 appropriation levels and to the full amount authorized under P.L. 100-242. We also urge Congress to reject the President's proposal that qualified localities be limited, and to assure that any expansion in the utilization of CDBG funds be accompanied by adequate appropriations.

SUPPORTIVE HOUSING DEMONSTRATION PROGRAM

NAPRR supports full implementation of the Supportive Housing Demonstration Program authorized in 1987 under the Stewart B. McKinney Homeless Assistance Act and which builds upon the Transitional Housing Demonstration Program first authorized by the 99th Congress. Of the $85 million appropriated for this program in FY 1987, $20 million must be spent for transitional housing projects for homeless families, $30 million for transitional housing for people with mental disabilities and $15 million for permanent housing for people with disabilities. Funds for the transitional housing program are provided to government and private nonprofit agencies for a percentage of the costs of acquiring and rehabilitating housing, and for providing supportive services. The new permanent housing program provides funding to states to develop small community-based housing for people with disabilities who have moved from transitional housing, are homeless or at risk of becoming homeless. Funding may be used only to purchase and/or rehabilitate existing property and must be matched dollar-for-dollar by the state.

Earlier this year, the Coalition on Human Needs published a report of a year-long study of people who are poor. They found that 36 percent of the sample population interviewed for that study said that they lived in families in which at least one person was "disabled, impaired or seriously ill." This was nearly four times the number who were purposely selected to be interviewed by the Coalition as representing the "disabled poor." It is about twice as high as usual estimates of the incidence of disability among poor people who do not live in institutions, and nearly four times the estimate of the incidence of disability in the general population. The incidence of illness and disability among elderly people over age 60 interviewed by the Coalition was twice as high as for those interviewed as a whole.

Although NAPRR welcomes the President's proposed increase in funding for this program in FY 1989, his request targets all funds on transitional housing, and he proposes termination of the permanent housing component of the program. There is not enough adequate low-cost housing available in this nation to provide homes for people when the 18 month transitional period expires. More permanent housing is urgently needed.

NAPRR recommends that $140 million be appropriated for the Supportive Housing Demonstration Program in FY 1989, with the $75 million increase over FY 1988 funding targeted for permanent housing.

STATEMENT OF ALEXANDER WEIR III, ASSOCIATION FOR RETARDED CITIZENS

HOUSING FOR MENTALLY RETARDED

Senator PROXMIRE. The next witness is Mr. Weir, the Association for Retarded Citizens of the United States.

Go ahead.

Mr. WEIR. Thank you, Senator, Mr. Chairman. My name is Alexander Weir III. I am the president of the Association for Retarded Citizens of Virginia, and I am speaking on behalf of the Association of Retarded Citizens of the United States. I would also like to add as a personal aside that I am a parent of a mentally retarded child, and the reason I am here as an advocate and volunteer is because I know of the need for housing is very great.

In my area of Virginia, the waiting list for group homes for the mentally retarded would take 30 years to fill. That is an abominable situation, and I hope that the federal government recognizes the need for housing.

We are asking on behalf of the association for assistance to developmentally disabled programs for the housing and development HUD programs, the section 202 programs, which are most visible, as well as the Community Development Block Grant Program, which helps rehabilitate rental housing to meet the needs of the section 232 mortgage insurance program to leverage private financing to add for socialized housing programs and the section 8 Rental Assistance Program.

Specifically, we are asking for the congregate housing services program, which has been a unique initiative to assure that those living in HUD facilities in the community will have the support necessary to keep them out of institutional settings.

We urge that that program be fully funded at the $10 million authorized by Public Law 100–242. Our organization recognizes the current budget restrictions imposed by the serious ongoing deficit problems.

However, increased problems of homelessness and the need to provide affordable housing to our most at risk citizens demands continued and viable federal support. Therefore, we urge the current service level funding for the assisted housing programs and the Community Development Block Grant Program. This will provide an additional 12,000 new units for fiscal year 1989, and also we urge the continuance of the 25 percent set-aside for developmentally disabled programs.

We also would urge that the act recognizes the need for new regulations for handicapped programs under the section 202 program and also urges that funding under section 8 for developmentally disabled housing projects be transferred to meet the needs of this program.

We would urge that, as well as continued assistance for pipeline projects which are experiencing problems because of the cost containment and inadequate fair market rents currently involved.

We ask for funds available to assure that at risk projects receive the necessary assistance. I would like to say that in Virginia, where I live, across our state we have a waiting list of over 6,000 citizens with mental retardation, adult citizens who are in need of community housing.

This waiting list includes over 1,100 in institutions who shouldn't be there according to all who are knowledgeable of the situation. I urge that this committee consider improving the federal assistance for housing programs. Thank you.

Senator PROXMIRE. Thank you very much, Mr. Weir.

[The statement follows:]

STATEMENT OF ALEXANDER WEIR III, PRESIDENT, ASSOCIATION FOR RETARDED CITIZENS OF VIRGINIA

Mr. Chairman, Committee Members ... I am Alexander Weir, President of the Association for Retarded Citizens of Virginia. I am happy to be here today to address the fiscal year 1989 appropriations for HUD programs.

The Association for Retarded Citizens of the United States counts among its membership over 160,000 individuals across the nation who are, or speak on behalf of, the over six million United States citizens with mental retardation. Our priority concern, particularly in the last ten years, has been the establishment of community-based services for people with mental retardation and the concommitant deinstitutionalization of the large, frequently inhumane residential settings many have been forced to call home. Our success, and that of our ARC affiliates around the country, will be greatly dependent on the availability of affordable, accessible community-based housing or on access to the means to develop such housing.

As result, the people we represent, and those who provide for them, look to programs available through HUD to spur the development of, and assure access to, community living options. In particular, the ARC, through its many state and local units, has become one of the largest sponsors of handicapped projects under the Section 202 loan program since its availability was expanded to programs for people with disabilities. We have found, as a 1984 report within HUD also concluded, that the private market, in and of itself, is not going to produce anywhere near sufficient housing to meet the needs of people with disabilities. Housing availability continues to be as major a problem as affordability for people with disabilities; thus, the continuance of assisted housing programs which both provide rental subsidies and prompt new construction and rehabilitation is of dual concern to our constitutents.

Although the Section 202 program is the federal program which has most visibly contributed to expanding housing options for people with disabilities, there are many other ways in which HUD initiatives are assisting people with handicaps living in the community. For example, the Community Development Block Grant program has been helping organizations rehabilitate rental housing to meet the accessibility needs of tenants with disabilities. The Section 232 Mortgage Insurance Program is beginning to be more instrumental in helping to leverage private financing for specialized housing. In the arena of direct subsidies, people with mental retardation and other disabilities have been entering a housing market less restrictive than the traditional group home alternatives by participating in the Section 8 Rent Assistance Program and by utilizing public housing.

The Congregate Housing Services Program has been a unique initiative to assure that those living in HUD facilities in the community will have the support necessary to keep them out of institutional settings. We urge the Committee to assure full funding of this program at $10 million now that it has been permanently authorized in P.L. 100-242.

Access to community-based housing alternatives, besides offering the persons with disabilities the opportunity for more normalized and integrated living situations, frequently also results in a lessening of the federal support dollars required for institution-based care. It is therefore with great concern that we have observed the continuing drastic decline in federal appropriations for assisted housing, by most estimates, over seventy percent during the last seven years.

Our organization recognizes the current budget restrictions imposed by the serious ongoing deficit problems. However, the increasing problems of homelessness and the need to provide affordable housing to our most at-risk citizens, demands continued and viable federal support. Therefore, the Association for Retarded Citizens recommends current service level funding in the assisted housing programs, and in the Community Development Block Grant. For Section 202, this would mean assurance of the availability of 12,000 new units for fiscal year 1989. We urge the Committee to continue the twenty-five percent set aside for projects for people with disabilities as was approved during conference efforts last year. The Housing and Community Development Act of 1987 recognized that the handicapped portion of the Section 202 Program was burdened by inappropriate and often restrictive regulations. Besides mandating the development of new guidelines for projects for people with disabilities, (guidelines HUD has yet to begin developing), the Act also authorized a new subsidy mechanism. Therefore it is necessary to transfer from Section 8 the funds to be obligated for fiscal year 1989 handicapped projects. In addition, P.L. 100-242 authorized assistance for pipeline projects which are experiencing problems because of cost containment and inadequate Fair Market Rents. Funds must be made available to assure that at-risk projects receive the necessary assistance.

Mr. Chairman, I want to thank you and the rest of the Committee for the continuing interest you have shown in the housing needs of people with disabilities. Our national governmental affairs staff is available to assist you if you require any further information.

STATEMENT OF MARY ADAMS, AMERICAN ASSOCIATION OF RETIRED PERSONS

ACCOMPANIED BY DON WHITFORD, FEDERAL AFFAIRS DEPARTMENT, AMERICAN ASSOCIATION OF RETIRED PERSONS

Senator PROXMIRE. We now take testimony from Mary Adams.

Ms. ADAMS. Mr. Chairman, I am Mary Adams, chairperson of the housing subcommittee of the New Jersey State Legislative Committee of the American Association of Retired Persons. I am accompanied by Don Whitford of our federal affairs department. We appreciate this opportunity to testify regarding fiscal year 1989 appropriations.

Despite some improvements, housing conditions remain a serious problem for many older renters and homeowners. Older renters pay a higher percentage of their incomes for rents and older homeowners occupy a higher percentage of substandard housing than any other age category.

The American Association of Retired Persons believes that the fiscal year 1989 HUD appropriation bill should halt the erosion of federal housing programs and initiate prudent investments to help meet our nation's current, our future housing needs.

AARP'S RECOMMENDATIONS

I would like to highlight several of AARP's recommendations for the subcommittee's consideration. No. 1, appropriate at least the $5.4 million needed to maintain current services at the 61 congregate housing services program sites.

AARP strongly advocates expansion of congregate services and supports an increase in appropriations to the full authorization of $10 million. In light of possible restructuring of the program, however, the CHSP should minimally be continued at the current services level.

By providing nonmedical services to frail residents of section 202 and public housing, the CHSP has been shown to cut the expected rate of placement in nursing homes nearly in half. Costly institutional care should not be the only alternative for the estimated 165,000 older assisted housing residents who need such services.

AARP has been working with the House and Senate authorizing committees on a comprehensive supportive housing package that we hope to see introduced later this year as part of a housing reform bill. We hope this subcommittee will be prepared to fully fund this cost effective program when it is implemented.

Point two: Fund the section 202 program at levels sufficient to produce 12,000 new units as authorized under the Housing and Community Development Act of 1987. Research indicates a likely shortfall in the product market of some 2.8 million specialized housing units for older persons by the year 2000.

SECTION 202 PROGRAM

Most likely to be left out are those with the most acute needs: Women over 75, no-income households, and the frail. Production levels under the highly successful section 202 program have already been cut well below the 20,000 unit annual target set by the 1981 White House Conference of Aging.

Administration proposals would further reduce funding for section 202 housing by 38.1 percent of the remaining funds. Twenty-five percent would be set aside for the handicapped, with special priority for the mentally handicapped homeless. If implemented, these proposals would reduce new elderly housing production from 8,350 to 5,250 units.

AARP strongly urges Congress to reject this slight of hand and provide housing——

Senator PROXMIRE. Could you wind up in about 1 minute or so?

Ms. ADAMS. Yes. AARP also urges your serious consideration of specific recommendations which are detailed in our longer statement submitted for the record.

Thank you again for the opportunity to testify and for the strong tradition of support for assisted housing demonstrated by this subcommittee.

Senator PROXMIRE. Thank you very much, Ms. Adams.

[The statement follows:]

STATEMENT OF MARY ADAMS, AMERICAN ASSOCIATION OF RETIRED PERSONS

The American Association of Retired Persons, a membership organization of 28 million older persons, appreciates this opportunity to testify on appropriations for programs under this Subcommittee's jurisdiction. AARP's recommendations for specific programs can be summarized as follows:

1) Provide at least sufficient funding ($5.4 million) for the Congregate Housing Services Program to maintain current service levels at all 61 project sites through FY 1989, pending development of an expanded supportive housing program by the authorizing committees;

2) Provide sufficient loan authority and Section 8 rent subsidies to support 12,000 new units under Section 202 Housing for the Elderly and Handicapped program;

3) Provide sufficient operating subsidies for public housing authorities to maintain adequate services for all tenants;

4) Maintain funding for the public housing modernization program at no less than current levels, with a portion of any additional funds to be used for modifications to assist tenants who are "aging in place";

5) Retain availability of Section 8 project-based subsidies for prepayment-eligible properties; and

6) Maintain the Section 8 existing program as the primary source of rent assistance for low-income households.

7) Adopt report language with regard to the Environmental Protection Agency (EPA), calling for greater use of Senior Environmental Employment (SEE) enrollees in EPA activites.

While progress has been made in improving the housing conditions of older persons, serious problems remain for older homeowners and renters. Harvard University's recently released study of "The State of the Nation's Housing" notes that older renters continue to pay a higher percentage of their incomes for rent than any other age group (36 percent). Other recent data indicate that the median rent of an older woman living alone consumes roughly one-half her income. Some 2.3 million older households spend over 35 percent of their incomes on housing. In addition, the Harvard study found that older homeowners continue to occupy the highest percentage of substandard housing (12 percent) of any category of homeowners.

The Administration's funding proposals for housing assistance in FY 1989 are very inadequate to address current housing needs -- even more inadequate when addressing likely future needs. The Harvard study projects that an additional 5.5 million new older households will be formed by the year 2000. During this same time period, the University of Michigan has projected a shortfall in the private market of some 2.8 million specialized housing units for older persons. Those most likely to be left out by the private market are those with the most acute housing needs -- older women over 75, low-income households and the frail.

New approaches to housing assistance must be combined with a renewed federal commitment to decent, affordable housing for all Americans. AARP believes the FY 1989 HUD Appropriation bill should halt the slow erosion of our federal housing programs and initiate prudent investments to help meet our nation's current and future housing needs. I would like to highlight several of AARP's recommendations for the Subcommittee's consideration.

1) Appropriate at least the $5.4 million needed to maintain current services at the 61 congregate housing services program (CHSP) sites. AARP strongly advocates expansion of congregate services and supports an increase in appropriations to the full authorization of $10 million. In light of possible restructuring of the program, however, the CHSP should, at a minimum, be continued at the current services level.

The CHSP has proven very effective in preventing unnecessary institutionalization among older and developmentally disabled residents of public and Section 202 housing. An independent evaluation released in 1986 notes the expected institutionalization rate for older residents was cut nearly in half at sites having CHSP services. Equally impressive were the deinstitutionalizing effects of CHSP services. At sites for older tenants, administrators were six times more likely to admit residents from nursing homes when they had CHSP services to offer.

Despite these successes, the Administration has proposed termination of the CHSP, a short-sighted approach that ignores the challenge faced by public and assisted housing management in providing for the needs of older tenants who are "aging in place." Currently, almost 40 percent of all households in public housing and 50 percent of all housing in Section 8 new construction are occupied by older households. AARP estimates that about 24 percent of elderly persons in federally assisted housing -- some 165,000 persons -- have problems performing routine daily tasks. Costly institutional care is too frequently the only alternative to their current residences.

The needs of these individuals were recognized in the Housing and Community Development Act (HCDA) of 1987, which made the CHSP a permanent program authorized at $10 million for FY 1989. AARP has been working with the House and Senate authorizing committees on a new approach to expanding these services further in a comprehensive supportive housing package.

AARP proposes to give states an option to receive federalmatching funds for CHSP-type, supportive services through the Medicaid program. HUD would finance supportive housing managers at the congregate housing sites and provide funds for needed retrofitting or rehabilitation of the facilities. AARP hopes that this proposal will be part of a new housing bill to be introduced later this year. In the interim, we are requesting that the Subcommittee maintain current services at the 61 existing CHSP sites through FY 1989.

2) Fund the Section 202 Program at levels sufficient to produce 12,000 new units. While AARP recognizes that the Subcommittee faces exceptionally tight spending limits for FY 1989, we ask that you fund the Section 202 program at a level sufficient to support 12,000 units, as authorized under the Housing and Community Development Act (HCDA) of 1987. At a minimum, the current level of spending, adjusted for inflation, should be maintained for Section 202.

As previously discussed, there is a growing need for the specially designed units for older and handicapped persons produced under Section 202. These units, equipped with such features as non-slip floors, accessible doorways, and lowered countertops, are simply unavailable or unaffordable to low-income persons in the private market. Production levels under this highly successful program have already dropped well below the 20,000 unit annual target set by the 1981 White House Conference on Aging.

The Administration proposes that funding for the Section 202 program be reduced by 38.1 percent to $350 million, roughly enough for 7,000 units. Also proposed is a 25 percent set-aside of program funds for the handicapped with a requirement that "special priority" be given to the mentally handicapped homeless. If implemented, these proposals would reduce the elderly housing allocation from 8,350 to 5,250 units. Moreover, to meet its obligations under the McKinney Assistance to the Homeless Act, the Administration proposes to take funds from existing programs, including approximately $50 million from the Section 202 program, to provide permanent housing for the homeless mentally ill. AARP strongly urges Congress to reject this sleight of hand. Housing for the homeless should be provided, as authorized, under the McKinney Act.

AARP supports the 15 percent set-aside for handicapped projects established by HCDA of 1987. We hope that the appropriations bill will not attempt to establish a higher set-aside. The Department of Housing and Urban Development (HUD) anticipates problems in utilizing the full amount of funds set aside under last year's bill, based on 1987 experience. A higher set-aside than that authorized under HCDA of 1987 risks losing scarce Section 202 and Section 8 funds and allows the administration to claim there is no need for additional Section 202 housing. By providing the resources to finance 12,000 units of Section 202 housing, the full authorized level, the Subcommittee can assure that all qualified applications will have a reasonable chance to be funded.

3) Provide sufficient operating subsidies for public housing. Over 500,000 units of public housing are occupied by older households -- some 40 percent of all households living in public housing. Underfunding of operating subsidies jeopardizes the ability of public housing authorities to maintain housing units and provide services like security, which are particularly important to older residents. Administration budget proposals would underfund operating subsidies by relying on savings dependent on future statutory changes. AARP believes that operating subsidies should approximate actual performance funding system (PFS) requirements and should not be tied to uncertain future savings.

4) Maintain funding for the public housing modernization program no less than current levels. AARP opposes the Administration's proposal to reduce modernization funds from $1.7 billion to $1 billion. The current stock of public housing is a valuable public resource and strong efforts should be made to arrest deterioration and provide a safer environment for tenants. The congressionally mandated ABT study indicates that about $21.5 billion would be required to restore this housing to a safe condition. While this is a very substantial sum, the replacement cost of public housing is estimated at $70 billion.

An important consideration in any long-term modernization program should be modifications that assist older residents who are aging in place. Currently, half the older residents of public housing live in "family" developments where such features as grab bars, extra wide doorways and lowered countertops are not available. If the Subcommittee decides to increase the modernization program above current levels, AARP hopes that a portion of the funds will be devoted to such improvements. We would recommend that language to that effect be included in the Manager's report accompanying the appropriations bill.

5) Retain availability of Section 8 subsidies for prepayment-eligible projects. AARP is very concerned about the potential impact of mortgage prepayments on older tenants. We estimate that prepayment-eligible projects represent 7 to 10 percent of all federally assisted housing serving older people. Continued availability of project-based subsidies is critical to preventing prepayments from occurring. A report of the National Housing Preservation Task Force indicates that project-based subsidies in combination with other incentives could keep total prepayments below 50,000 units. Further, the report recommends against the use of housing vouchers as a replacement for existing rent subsidies in any project whose mortgage has not been prepaid. A shift to 5-year vouchers would create especially difficult financial problems for Section 202 projects that are heavily dependent on Section 8 subsidies.

6) Maintain the Section 8 existing program. AARP opposes Administration proposals to replace the Section 8 existing and moderate rehabilitation programs with housing vouchers. The savings claimed from this proposal accrue largely from the shorter duration of contract authority for vouchers. More significant from the older renter's perspective are the results of a recent HUD-sponsored evaluation which showed that nearly half of all voucher recipients paid over 30 percent of their incomes for rent.

Housing assistance using existing units generally offers little help to less mobile older persons needing specialized housing. However, AARP has proposed changes to the voucher program that would combine a specified number of vouchers with counseling and supportive services targeted to low-income individuals with multiple disabilities and those who live alone with limited support. We hope that these proposals will also be included in housing legislation introduced later this year.

In the interim, AARP prefers that the Section 8 existing program be retained as the primary form of rental assistance for low-income persons.

7) Senior Environmental Employment (SEE) Program. The Association urges that the Subcommittee adopt report language calling upon the EPA to expand its use of Senior Environmental Employment (SEE) enrollees in agency activities. Special emphasis should be placed on the Asbestos Hazard Emergency Response Act (AHERA) initiative and Superfund activities. SEE enrollees have performed effectively in the school asbestos inspection program and can make valuable contributions in other high priority activities as well.

Conclusion

AARP believes further reductions in assisted housing programs would be unfair and would jeopardize the living conditions of many low-income households. Prudent investments must be made in the nation's low-income housing stock if even more difficult housing problems are to be avoided in the future. AARP urges the Subcommittee to continue its strong tradition of support for assisted housing programs.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT AND VETERANS ADMINISTRATION

STATEMENT OF WARREN LASKO, EXECUTIVE VICE PRESIDENT, MORTGAGE BANKERS ASSOCIATION OF AMERICA

FEDERAL HOUSING CREDIT PROGRAMS

Senator PROXMIRE. Our next witness is Warren Lasko, executive vice president of the Mortgage Bankers Association.

Mr. Lasko?

Mr. LASKO. Thank you, Mr. Chairman. I do represent the Mortgage Bankers Association of America and we appreciate the opportunity to testify, particularly on the appropriations for FHA, GNMA, and the VA.

I would just note in passing that the members of the mortgage banking industry finance some 90 percent of the housing for families served by these federal housing credit programs.

First, with respect to the FHA programs, the basic FHA home mortgage program remains on sound financial footings. The reserves in the mutual mortgage insurance fund continue to grow and will exceed $4.1 billion by the end of 1989. Consequently, there should be no need in the foreseeable future for changes to the FHA fee or premium structure.

In the VA home loan guarantee program, financial conditions are less assured. The administration budget envisions a continuing need for appropriations, but at a reduced level of $658 million in 1989.

We would underscore that the VA program is an entitlement program that is earned by servicemen and women. We urge the subcommittee to support the administration's appropriation request. We do believe that the losses under this program will decline in the coming years. The economic conditions in the South and Southwest seem to be bottoming out and the VA has done a good job of substantially tightening its underwriting requirements.

In the GNMA mortgage-backed securities program, we again note the sound condition of that program's reserve funds, which, by the end of 1989, will exceed $2 billion for the first time.

CONCERN WITH 44 BASIS POINT SERVICING FEE

The one issue we wanted to raise here is the administration's proposal to change the longstanding 44 basis point servicing fee.

Our concern is that a change to this basic program provision could seriously disrupt the marketability of GNMA securities, impair their liquidity, and potentially cost the government large sums of money in the form of claims on the government guarantee. GNMA's own experience in the mobile home program has amply demonstrated that if adequate servicing income is not assured, issuers have an incentive to abandon the program, leaving the government with the losses.

CREDIT CEILINGS

Let me turn to the subject of credit ceilings, which affect each of these housing credit programs. We believe fundamentally that credit ceilings, particularly as they affect the FHA and GNMA programs, are unnecessary and, in fact, can be damaging to the program.

Both the FHA and GNMA programs are fully self-supporting. They should be available to all who can make the necessary down payment and afford the monthly payment on an FHA loan. Arbitrary caps on their volumes serve only to occasionally prevent the people who need the FHA program most from receiving its benefits.

If, nonetheless, there are to be ceilings, we recommend that you track the Senate and the House budget resolutions by providing ceilings of $96 billion for FHA and $144 billion for GNMA.

Let me just briefly address environmental law. In the area of environmental law, we see it increasingly affecting housing and real estate finance. We are concerned as lenders, as you are, about the life threatening effects of such materials as asbestos and lead-based paint.

We strongly support the $2 million demonstration program to train inspectors and contractors and for the EPA to assess the Asbestos Hazard Emergency Response Act.

That concludes my statement, Mr. Chairman. Thank you.

Senator PROXMIRE. Thank you very much, Mr. Lasko.

[The statement follows:]

STATEMENT OF WARREN LASKO, EXECUTIVE VICE PRESIDENT, MORTGAGE BANKERS ASSOCIATION OF AMERICA

Mr. Chairman and Members of the Subcommittee, my name is Warren Lasko. I am Executive Vice President of the Mortgage Bankers Association of America.

We appreciate the opportunity to testify on the 1989 appropriations for FHA, Ginnie Mae, and the VA. Members of the mortgage banking industry finance some 90 percent of the housing for families served by these federal housing credit programs.

FHA Mortgage Insurance

With respect to the FHA programs, the basic FHA home mortgage program remains on sound financial footings. The reserves in the Mutual Mortgage Insurance Fund continue to grow, and will exceed $4.1 billion by the end of 1989. Consequently, there should be no need in the foreseeable future for changes to the FHA fee or premium structure.

VA Loan Guaranty Program

In the VA home loan guaranty program, financial conditions are less assured. The Administration budget envisions a continuing need for appropriations, but at a reduced level of $658 million in 1989.

We would underscore that the VA program is an entitlement that is earned by servicemen and women. We urge the Subcommittee to support the Administration's appropriation request.

We believe the losses under this program will decline in the coming years. The economic reversals in the South and Southwest seem to be bottoming out, and the VA has substantially tightened its underwriting requirements.

Ginnie Mae Mortgage-Backed Securities Program

In the Ginnie Mae mortgage backed-securities program, we again note the sound condition of the program reserve funds, which by the end of 1989, will exceed $2 billion for the first time. The one issue we wish to raise here is the Administration's proposal to change the long-standing 44 basis point servicing fee. Our concern is that a change to this basic program provision could seriously disrupt the marketability of GNMA securities, impair their liquidity, and potentially cost the government large sums of money in the form of claims on the government guaranty. Ginnie Mae's own experience in the mobile home program has amply demonstrated that if adequate servicing income is not assured, issuers have a strong incentive to abandon the program and leave the government with the losses.

Credit Ceilings

Let me briefly address the subject of credit ceilings, which affect each of these housing credit programs. MBA believes fundamentally that credit ceilings--particularly as they affect the FHA and Ginnie Mae programs--are unnecessary and in fact are damaging to the programs. Both the FHA and Ginnie Mae programs are fully self-supporting. They should be available to all who can make the necessary down payment and afford the monthly payment on an FHA loan. Arbitrary caps on their volume serve only to disrupt their smooth operation and sometimes prevent the people who need them most from receiving the benefits.

If, nonetheless, there must be ceilings, we recommend that you track the Senate and House budget resolutions and provide ceilings of $96 billion for FHA and $144 billion for Ginnie Mae.

Federal Credit Legislation

Let me comment briefly on the Administration's proposal for what is called "credit reform." We believe the Administration's proposal to require appropriations to cover what they call "implicit subsidies," even though these do not reflect real dollar outlays, is just one last effort at choking off the government's role in housing. For FY 1989, the Administration's proposals would require an additional $4.1 billion in budget authority for FHA, VA, and GNMA. These numbers bear no relationship to actual outlays. We urge you once again to reject this plan.

Environmental

The area of environmental law is increasingly affecting housing and real estate finance. We are as concerned as you are about the life-threatening effects of such materials as asbestos and lead-based paint. We strongly support the $2 million demonstration program to train inspectors and contractors and for the EPA to assess the Asbestos Hazard Emergency Response Act.

* * *

That concludes my statement, Mr. Chairman. We would like to express to you our appreciation and congratulations on your extraordinary 31-year career in Congress and for your strong support of housing during that time.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

STATEMENT OF SCOTT SKLAR, SOLAR ENERGY INDUSTRIES ASSOCIATION

SOLAR BANK PROGRAM

Senator PROXMIRE. Our very last witness of the day and this Senator's last witness ever that I will hear as chairman of this subcommittee is Scott Sklar with Solar Energy Industries Association.

Mr. SKLAR. This is an honor, Mr. Chairman. Thank you. I was going to say, I am probably last; there is no money left. But we will see.

I have testified, in fact, for 8 years on this little program called the solar bank. It is $1 million, and I am asking to keep the $1 million. I am doing this quite sincerely.

This program, as you know, energy imports, are now up to 1973 levels, close to where the embargo was. There was low-income programs, weatherization, and income assistance, which has helped low-income people lower their energy bills.

The tax credits expired in 1985, which kept the higher incomes. The bank just buys down the interest rates for lower and middle income people to afford solar systems. The price has come down 35 percent. The efficiency is greater.

We have increased our domestic market share slightly. Our international competitors are building on us: Australia, Britain, Israel, and Japan. The Department of Commerce has funded multilingual materials for overseas markets; the Department of Energy has funded industry promotion documents for the consumer.

Basically, for the last 8 years, HUD has tried to close the program down. It has only been the congressional interest that has kept it going. The fact of the matter is if you keep this program going for about 2 more years, we believe that most of the private banking and federal banking institutions will be developing their own incentives, and we won't need it any more, but we do need another year and a half, approximately, to get these incentives in the traditional financing schemes to keep the industry going.

We cannot survive unless the Feds build or help build our market a little bit or you will be importing all your solar collectors within 5 years from international competitors.

Thank you. It is an honor. I am sad to see you go as chairman, and I do hope you can keep this program going 1 more year at level funding.

Senator PROXMIRE. Thank you, Mr. Sklar. That is a very strong appeal. The difficulty is that the program has not been reauthorized. That makes it hard for the Appropriations Committee to act when you don't have an authorization to back it up.

Mr. SKLAR. We are aware of that. Fortunately, one, we have done a study we which we would be happy to give to the subcommittee to show it is under their existing authority anyway. Second, that the committees keep on saying, the authorizing committees, that they would even do it to back it up, but we are so small, somehow we never get around to it.

We will show you that it is under the current authority, anyway.

Senator PROXMIRE. Thank you very much.

[The statement follows:]

STATEMENT OF SCOTT SKLAR, EXECUTIVE DIRECTOR, SOLAR ENERGY INDUSTRIES ASSOCIATION

INTRODUCTION

The Solar Energy and Energy Conservation Bank was created on June 30, 1980 by Title V of the Energy Security Act of 1980, P.L. 96-294. According to the law, the purpose of establishing the Bank is to encourage energy conservation and the use of solar energy, and thereby reduce the nation's dependence on foreign sources of energy supplies.

In 1988, petroleum imports are climbing near the levels they were during the 1973 oil embargo. During the last fifteen years, the United States encouraged over one million solar applications through loan subsidies and tax incentives. Although this number appears large, the City of Tokyo alone has one million solar hot water systems.

In the 1970's, solar applications were encouraged through three discreet programs. For the low-income, energy conserving equipment including solar hot-water heating was funded in-part through the Low Income Energy Assistance Programs (HHS) or the Weatherization Program (US/DOE). For the middle-income, the Solar Bank program was established to provide loan subsidies which usually involved interest buy-downs. For the middle- and high-income, tax credits were available through December 1985.

In the late 1980's (1986-8), solar hot water sales range between $120 million to $150 million dollars. In 1988, the average costs of residential systems have fallen to $2,500 nationwide. And even with low energy prices, sales have increased ten-percent-a-year since 1986 particularly in the pool heating and new home construction sectors. The U.S. solar industry, in partnership with state energy offices and through funding from the U.S. Department of Energy, has created the Solar Rating & Certification Corporation (SRCC) which rates solar systems and solar collectors through a standard testing procedure accepted by ASHRAE.

Our international competitors: Australia, Britain, Israel, and Japan (to name a few) are increasing their world market share. The U.S. industry is rising to meet this challenge. But the U.S. solar industry can only succeed if the domestic market continues to expand. The Solar Energy and Energy Conservation Bank is an essential program to maintain in order to insure that the U.S. solar industry can maintain its world markets and continue to help the United States to offset imported petroleum -- at least two million barrels per year -- thus lowering the staggering U.S. trade deficit.

BANK HISTORY

The Solar Energy and Energy Conservation Bank has had a tumultuous history. The Administration took over a year to nominate a Director and the Director they finally nominated vowed to close the Bank. Obviously the U.S. Congress did not agree but the Bank then proposed regulations that had severely hindered its effective operation.

The Bank staff then proposed that active solar applications were not eligible for funding. The U.S. Congress overruled the decision. The Bank staff also routed monies through state government offices and in many cases allowed these monies to be melded with other energy conservation programs which diluted its purpose and potential. And finally, the Bank disbanded its advisory committee which isolated its decision-making authority from the solar industry, state governments, and local energy organizations.

Despite this irresponsibility, the Bank program has continued. The program has moved beyond the HUD-staff, but rather to some very aggressive states who were determined to promote solar energy. For example, the States of Massachussetts and Michigan have promoted the largest utilization of solar water heating applications which have been so successful, that installations just fall behind the housing penentrations of Arizona, California, Florida and New Mexico. This large market success was due directly to an enthusiastic support of the state energy offices using the Solar Bank as the prime incentive.

While the United States sliced solar building R&D from $75 million in FY'81 to $5.2 million in FY'88 and allowed the residential tax credits to expire in 1985, the only market development program left is the Solar Energy and Energy Conservation Bank. If the Solar Bank program is allowed to expire, the U.S. government will send yet another sign to the investment community that they do not support solar energy development. At a time when our international competitor nations sense a lessening of resolve by the United States to commercialize our solar technologies, they are expanding their research, market development, and export promotion activities.

The solar industry is concerned that unless solar policy is refocussed, the United States will face a replay of "VCR Syndrome". Simply put, "VCR Syndrome" is where America gives away its technological leadership in a technology only to purchase it back in later years from our competitors for millions, if not billions, of dollars more than you originally paid to develop the technology.

INDUSTRY REQUEST

The U.S. solar energy industry understands the dire need to cut the deficit and thus the Solar Energy Industries Association asks for level funding of $1.5 million in FY'89. In addition, SEIA requests that the Subcommittee include three directives in the report language to insure the Bank program is carried out in a responsible manner.

The first directive should instruct the Bank staff to reestablish to Solar Energy Advisory Committee, and to appoint some industry members in consultation with the national trade associations. This directive would not cost any significant monies.

The second directive should request that the Bank staff submit a brief report to this Subcommittee on its past performance in FY'88 and its program goals and objectives in FY'89.

The third directive should allow residential photovoltaic (solar electric) systems as fundable through the Bank if the photovoltaic systems provide significant electricity to the residence.

CONCLUSION

The Solar Energy and Energy Conservation Bank is an important program to promote solar energy applications. The Solar Bank has had significant success in certain states despite the disruptive machinations of the HUD staff. Moves to dismantle the Bank would cause further capital loss to the U.S. solar industry. Dismantlement would also give a competive upper hand to other industrialized nations.

Solar energy applications can offset petroleum imports. Every industrialized nation has an aggressive program to promote solar hot water heating. Many utilities are looking towards increased use of solar energy to levelize peaking loads and offset the need for new costly power plants. Even Fannie Mae increases the loan-to-debt ratio for houses with solar systems, because the purchasers will have lower utility bills and thus more disposable income to pay higher mortgage payments. Procurement regulations for the Department of Defense encourage the use of solar in their federal facilities to lower energy costs over the life of a building.

Obviously solar hot water applications save energy. The U.S. solar industry is less than fifteen years old yet has made impressive market penetration. The Solar Bank is an important program and moves to close the Bank will hurt our industry further after tax credit expiration and the federal R&D phasedown. The U.S. industry believes this small program deserves continued support. Thank you.

SOLAR BUILDINGS
ACTIVE SOLAR TECHNOLOGIES
FACT SHEET - INTERNATIONAL STATUS

Status of the U.S. Industry	Currently	Estimate (early 1990's)
o Number of U.S. companies	350	
o Annual sales ($, DHW systems)	$275M	$365M
o Installed capacity by U.S. firms		
* within U.S.	1.0M systems	
* global total		
o Typical DWH system lifetime	15 Years	
o Typical system capacity factor (per year)	2 Barrels	
o Typical DWH system capital cost (residential)	$2,900	
o Typical energy savings, DWH system	$360 - 480/Yr.	

Status of the International Market

- o Primary competitors (countries): Australia, Israel, Japan, Britain, Greece, and Brazil
- o Current sales of foreign firms: Not available
- o Global total installed capacity: Not available
- o Size of current international market: $875M (estimated)
- o Projected 5-year international market growth potential: $2.5B according to the Solar Energy Industries Assn.

Competitive Position of the U.S. in the International Market	Past 5 Years	Currently
o World market share of U.S. firms (DHW systems) (*)	60%	45%
o U.S. market share of primary foreign competitors (DWH systems)	10%	5%

o Past history & future trends for U.S. position in international market: Loss of residential tax credit resulted in nearly 5000 companies going out of business and unemployment for 35,000 workers. Market bottomed out in 1986; sales are now rising at about 10% per year and are expected to continue doing so during the next decade if energy prices remain stable. Space heating systems also available; with higher temperature collectors becoming available, combined solar heating and cooling systems will become technologically possible.

o Scientific or technological strengths/weaknesses of U.S. firms: U.S. leads technologically; international competitors are large firms working in partnership with their governments. This partnership could result in the U.S. losing its technological leadership.

o Other comments: Industry/Federal partnership essential in research if the U.S. is to maintain its technological leadership; allowance of solar options in Federal loan and grant programs also essential.

RESEARCH FUNDING IN RELEVANT COUNTRIES: (Millions of U.S. Dollars)

	Belgium	Canada	Germany	Greece	Italy	Japan	Netherlnds	Spain	Sweden	Swtzerld	UK	US
1987	1.95	2.71	5.67	1.93	4.82	3.44	1.29	1.61	5.66	5.37	1.96	6.50
1988			4.10			3.75						5.40

(*) excluding the Peoples Republic of China

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

PREPARED STATEMENTS

Senator PROXMIRE. Additional statements concerning the HUD budget have been received by the subcommittee. Without objection, they will be inserted at this point in the record.

[The statement follows:]

STATEMENT OF AMY S. ANTHONY, MASSACHUSETTS SECRETARY OF COMMUNITIES AND DEVELOPMENT

My name is Amy S. Anthony and I am the Secretary of Communities and Development for the Commonwealth of Massachusetts. By way of introduction, the Executive Office of Communities and Development is the cabinet-level agency in our state that is responsible for all housing and community development programs.

I appreciate the opportunity to discuss appropriations for the programs administered by the federal Department of Housing and Urban Development.

Let me begin by saying that we appreciate the effort this Committee has made to sustain some semblance of funding for housing and community development programs. Had it not been for Congressional efforts, the attempt by the current Administration to totally dismantle federal programs in these critical areas would have been even more successful than it has been. However, despite these efforts I regret to say that this Administration has virtually achieved what one would have thought impossible in the most affluent nation on the face of the earth; the abandonment of any federal commitment to the principle that every citizen is entitled to decent and affordable housing. This principle had, up until 1980, been a fundamental, bipartisan belief for almost a half century.

The sad results of this abandonment are all to apparent even in this nation's capitol. For millions of Americans, the basic commitment that was made in 1949 to a "decent home and a suitable living environment for every American" has not only fallen short, it has been totally unfulfilled.

While the problem of homelessness is one of many dimensions, there isn't any great mystery about why this country is facing a crisis of homelessness. Under the Carter and Ford administrations, we were building or rehabilitating over 200,000 units of housing for lower income families a year. Under the current Administration that number has plummeted by nearly 90%. At a time when the need for affordable housing is greater than at any time since after World War II, the federal government's role has declined to its lowest point since the 1930's.

And what is this Administration's response? Again this year they have submitted a budget which mocks this nation. The litany is one which I am sure the Committee has heard. The remaining housing production program (HODAG) -- eliminated; UDAG a program which has resulted in many successful housing projects as well as substantial community/economic development investment -- eliminated; the Section 8 moderate rehabilitation program another stimulus for private housing rehabilitation -- eliminated; the innovative Nehemiah homeownership program enacted by the Congress last year -- not funded; the CDBG program a main stay in community revitalization and development efforts, as well as a source of funds for housing rehabilitation -- cutback; funds for rehabilitation of federal public housing -- cutback. These are but a few of the examples of the Administration's continued assault on housing and community development programs.

I do not suggest that the responsibility for providing affordable housing for our citizens is the federal government's alone. Indeed that is why we believe so strongly in the need for a national housing partnership. A true national partnership that brings together the resources and commitment of government at all levels along with all segments of the private sector. We have created such a partnership in Massachusetts; a partnership that is replicated in over 150 communities throughout the state. I truly believe that not only the desire but the capacity to assume an active role in housing has increased dramatically over the last decade in states and localities throughout the nation.

By way of example of what one state is doing in the area of housing, in Massachusetts we have formed the Massachusetts Housing Partnership (MHP). The Partnership has mobilized, with the support of our state legislature, more than half a billion dollars in financial and technical assistance to aid local affordable housing initiatives. MHP encourages the formation of local housing partnerships which develop locally-appropriate solutions to their housing needs. These partnerships include public, private, civic and non-profit group members. MHP is offering communities a "new way of doing business" in which communities determine housing needs, shape their own affordable housing solutions and then seek multiple resources, if necessary, through MHP.

More than two-thirds of the communities in the state have some form of state-supported public housing for their low income citizens. In addition, the state has a variety of programs available to assist in the production of private housing including the State Housing Assistance for Rental Production (SHARP) program a highly successful shallow subsidy program designed to stimulate the production of mixed-income rental housing of which at least 25% of the units must be available to low income households, and the Homeownership Opportunity Program to assist first-time homebuyers.

Massachusetts is not alone. Many states throughout the nation have developed innovative programs to help in meeting their housing needs. However, absent an active federal partner, no state or the private sector alone can adequately meet the need to provide decent and affordable housing for all our citizens.

We need to reaffirm and invest in a federal commitment that will provide flexible housing production and preservation funding to states and localities to enable them to tailor rental and homeownership programs that meet their individual needs, and that build upon and require their own efforts and resources. A commitment that will complement housing production efforts through continued federal rental assistance programs. One that will broaden homeownership opportunities for moderate income buyers using federal credit and savings mechanisms in cooperation with state initiatives. That will preserve our existing stock of public housing and privately owned low and moderate income housing that is now threatened by the expiration of use restrictions. And that will make mixed income housing production the basis for our national housing production strategy.

With respect to the critical areas of community/economic development and neighborhood revitalization, we have been fortunate indeed that Congress has been able to sustain funding for both the Community Development Block Grant Program and the Urban Development Action Grant Program. Both these programs provide funding that has been effectively utilized by communities to undertake a wide variety of development and job generating activities. The Community Development Block Grant (CDBG) Program provides states and localities with a particularly flexible and effective tool to address local revitalization and community development needs. Because of the flexibility provided by Congress in the CDBG program, communities are able to focus resources on their most pressing problems, and in a way that is most appropriate to their local conditions.

In total, over the past six years, in Massachusetts through our Small Cities CDBG program we have provided for the rehabilitation of nearly 10,000 housing units, upgrading the quality and availability of housing for low and moderate income households. In addition, Small Cities CDBG funds have been used to assist more than 850 small and medium-sized businesses. This assistance has ranged from modest commercial storefront improvements grants, to $500,000 low interest "gap" financing to allow manufacturing firms to locate, rebuild, or expand their facilities in the Commonwealth.

Small Cities CDBG funds have also been utilized to help communities meet the high costs associated with providing the public infrastructure needed to keep pace with growth and development; to provide a variety of social services including day-care for working mothers, elderly assistance, bi-lingual education, and to provide a source of administrative funds needed to build effective management capacity at the local level to ensure that community revitalization efforts succeed. I think this gives you an indication of the tremendous impact this program has had on just one state.

I would like to close by urging this Committee and the Senate in general not to accede to attempts to take additional funds away from housing and community development programs. It is unconscionable to think that at a time when we have people sleeping in the streets, the remaining federal resources that are available could be cut. I hope this will not be the case, and that we can begin to develop anew the federal commitment needed to ensure decent and affordable housing for all our citizens.

STATEMENT OF THE NATIONAL ASSOCIATION OF REALTORS

On behalf of the more than 800,000 members of the NATIONAL ASSOCIATION OF REALTORS®, I would like to submit the following comments on HUD's FY 1989 Budget proposal relating to the Federal Housing Administration program, the Government National Mortgage Association program, the Section 8 Loan Management Set-Aside program, the Rental Rehabilitation program, the Housing Counseling Assistance program, and the Fair Housing Initiatives Program.

FHA Provisions

The proposed 1989 appropriations levels for the Federal Housing Administration (FHA) program includes the following provisions of interest to the NATIONAL ASSOCIATION OF REALTORS®:

$75 Billion Commitment Level

The NATIONAL ASSOCIATION OF REALTORS® estimates that the level of housing activity in FY 1989 will approximate the level of the current year. Accordingly, we recommend that the FY 1989 FHA commitment level be established at $96 billion, the same as the FY 1988 level. Continuation at this level will assure the uninterrupted availability of this vital home financing program that is so important to first-time and low-to-moderate income homebuyers.

Sale of Single-Family HUD-Held Notes

The NATIONAL ASSOCIATION OF REALTORS® opposes the appropriations bill's proposed sale of single-family, HUD-held notes without recourse. The Appropriations bill summary indicates that the face value of these HUD-held notes, (direct mortgage loans made by HUD), is $70.7 million, however, the expected proceeds from such a sale would amount to only $48.8 million. This is a loss of $21.9 million worth of valuable HUD assets. The NATIONAL ASSOCIATION OF REALTORS® believes that HUD's sale of notes should be performed with recourse to the HUD, that is, with HUD continually responsible for any defaults and claims experienced from these loans. While this may represent a lengthened period of HUD responsibility for these loans, we believe that this potential cost is offset by the much higher sales price that HUD will be able to obtain by selling those loans with recourse.

Federal Credit Reform

The HUD Appropriations bill summary identifies a Federal credit reform legislative proposal whose goal would be to change the way that Federal credit programs are treated in the budget. While the legislation is not pending before your Committee, the Committee should note that the combination of definitional and procedural changes proposed under such a plan would profoundly change the decision making process for all Federal credit programs. The mortgage insurance programs of the Federal Housing Administration (FHA), (and also the Veterans Administration (VA), and the Government National Mortgage Association (GNMA) Credit Programs) would all be impacted by this proposal. The proposal, as submitted by the Administration, provides that the Secretary of Treasury will determine "subsidy" levels for loans and guarantees. The so-called subsidy amounts would have to be appropriated for these programs by Congress. In effect, this proposal would treat loan guaranty programs as direct spending programs. It would not define subsidy in the customary way as the difference between the government's costs and its revenues. Instead it would adopt a definition that would, in effect, overstate the government's costs and thereby proclaim a "subsidy" in programs such as FHA and GNMA mortgage-backed securities where none exists, and would overstate the amount for credit programs where a real subsidy exists as contemplated under existing laws and policy.

This proposal, if adopted, would have a major impact on the Federal mortgage credit programs and the way they are authorized and approved. The procedural mechanisms required and the degree to which the Treasury would control the subsidy determination would affect the availability of these programs. If borrowers, lenders, and investors become uncertain that these programs will be available at all times, this uncertainty could result in an unwillingness to use the programs. These mechanisms would likely pressure the Congressional authorizing committees to increase user fees rather than to seek appropriations to cover the Treasury Department's determination of an estimated subsidy.

We oppose the addition of yet another layer of budget and appropriations procedures on these programs. Gramm-Rudman-Hollings imposed the requirement that all federal credit programs be subject to credit budget limits that place a ceiling on program activity. This requirement was intended to give Congress a "handle" on the level of Federal credit. The credit reform that is being proposed by the Administration does not remove the credit budget requirement, but adds an additional procedural layer.

Even though a "credit reform" provision was approved by the Senate last year as a part of the Gramm-Rudman-Hollings package, the "credit reform" proposal has not been subjected to full committee hearings by any committee or been reported by any committee of this Senate or the House. We urge your Subcommittee to subject the "credit reform" proposal to adequate scrutiny and hearings as well as the other appropriate Committees, before Congress takes any action.

Proposed Regulatory Changes:

The proposed appropriations bill also cites several changes to the FHA program to be performed via regulation, as follows:

- Deregulation of FHA Post-Endorsement Fees - The NATIONAL ASSOCIATION OF REALTORS® has learned that HUD does not intend to pursue this proposal.
- Deregulation of the FHA Loan Origination Fee - The NATIONAL ASSOCIATION OF REALTORS® opposes the deregulation of the one percent FHA loan origination fee. We are concerned that the deregulation of this industry benchmark will result in higher up-front fees to the first time homebuyer, and low-to-moderate income families who depend upon the FHA program to secure home mortgage financing.
- Modification of Credit Underwriting Standards - The appropriations bill summary indicates HUD's consideration of altering its credit underwriting ratio to evaluate a mortgage loan applicant based upon gross income, rather than upon net income. The NATIONAL ASSOCIATION OF REALTORS® wishes to reserve comment upon this proposal until specific regulations are published for comment - however, it should

be noted that our evaluation of such regulations will especially focus upon the continued ability of applicants to qualify for FHA-insured mortgage financing.

GNMA Provisions

The proposed 1989 appropriations level for the Government National Mortgage Association (GNMA) program includes the following provisions of interest to the NATIONAL ASSOCIATION OF REALTORS®:

$100 Billion Commitment Level

The NATIONAL ASSOCIATION OF REALTORS® estimates that the level of housing activity in FY 1989 will approximate the level of the current year. Accordingly, we recommend that the FY 1989 GNMA commitment level be established at $144 billion, the same as the FY 1988 level. Continuation at this level will assure the uninterrupted availability of this secondary mortgage market program upon which the users of the FHA, VA and Farmers Home Administration programs rely.

Federal Credit Reform

As stated above, the NATIONAL ASSOCIATION OF REALTORS® strongly opposes the Federal "Credit Reform" proposal.

Government-Assisted Housing and Community Development Programs

The proposed 1989 appropriations level for the Government-Assisted Housing and Community Development programs include the following provisions of interest to the NATIONAL ASSOCIATION OF REALTORS®:

Section 8 Loan Management Set-Aside

The FY 1989 HUD Budget calls for approximately 3,000 units in Section 8 Loan Management Set-Aside Assistance (LSMA) at a cost of $186.8 million in budget authority. The program is used to assist projects with cash-flow problems in order to assist them in maintaining their financial viability. The subsidy allows owners to raise rents to meet their operating expenses so they can avoid financial default and thus reduce claims on HUD's multifamily mortgage insurance fund. Thus, HUD allocates Loan Management Set-Aside Funds for designated units within multifamily projects in order to ensure the continued availability of units for lower income families and reduce federal outlays from HUD's insurance fund.

The NATIONAL ASSOCIATION OF REALTORS® recommends that the Subcommittee consider increasing this request to 5 or 6 thousand units. We believe that the demand for LSMA funds will exceed the 3 thousand units that the Administration has requested in its FY 1989 HUD Budget. Also, it would be more beneficial for the Federal government to eliminate the negative cash flow of these troubled projects rather than having to foreclose on the property.

Rent Control and the Rental Rehabilitation Program

The Administration is proposing legislation which would make localities that have rent control ineligible for funding under the Rental Rehabilitation program. The Rental Rehabilitation program is designed to assure an adequate supply of housing that is affordable to lower-income tenants. The program increases the supply of private market rental housing that is available to lower-income tenants by providing federal funds to rehabilitate existing units. Also, state and local governments have the flexibility to design and operate programs unique to their needs as long as they conform to the basic framework of the program.

The NATIONAL ASSOCIATION OF REALTORS® supports the rent control proposal, and urges you to include this provision in the FY 1989 HUD Budget. Rent control is a mechanism that undermines, distorts and aggravates a housing shortfall rather than providing a solution to a housing shortage. Private initiatives which could resolve many of our housing problems has been stifled by rent control. Rent controls discourage investors and builders who could construct and rehabilitate without Federal subsidy were it not for the below-market rental levels resulting from rent controls. We believe that communities which have discouraged investment in new rental housing because of rent control should not be eligible for any federally-assisted rental housing programs. Thus, we have urged elected officials at all levels of government to oppose the adoption of rent control legislation and the use of government funds to finance rent control advocacy.

Housing Counseling Assistance

The proposed FY 1989 HUD appropriations bill does not provide any funding for HUD-approved agencies to counsel FHA homeowners who become delinquent on their mortgages. The NATIONAL ASSOCIATION OF REALTORS® believes that homeownership counseling can be a valuable resource to combat delinquency and default problems for all types of mortgage programs, and we respectfully recommend that this program be granted funding to permit it to perform its important task.

Fair Housing Programs

The proposed 1989 appropriations level for Fair Housing programs includes the following provisions of interest to the NATIONAL ASSOCIATION OF REALTORS®:

Fair Housing Initiatives Program (FHIP)

The NATIONAL ASSOCIATION OF REALTORS® supports the $5 million funding level for FHIP in FY 1989 of which $3 million will be allocated for the private enforcement initiative. Both these funding levels are consistent with the authorizing levels contained in the 1987 Housing Bill. However, the purpose of the FHIP demonstration is not solely to provide data or testing procedures in support of fair housing enforcement efforts as implied in HUD's Congressional justification documents. The Private Enforcement Initiatives, as well as the other components of the Fair Housing Initiatives Program, in their entirety, will be conducted on a demonstration basis with Congress deciding whether or not to continue the program after September 30, 1989. This, too, is consistent with the Housing and Community Development Act of 1987.

Conclusion

Thank you again, Mr. Chairman, for this opportunity to comment on the proposed 1989 HUD appropriations bill.

STATEMENT OF THE NAVAJO NATION

Mr. Chairman, Members of the Committee, thank you for providing the Navajo Nation with this opportunity to submit a statement for the Record on the Department of Housing and Urban Development's proposed budget for Fiscal Year 1989. The statement has been drafted to guide this Committee in its efforts to shape the best possible budget for Indian people in Fiscal Year 1989.

For those of you not familiar with the Navajo Nation, we would like to provide you with the demographics of our reservation. The Navajo Nation is the largest Indian tribe in the U.S. with a population rapidly approaching 200,000 -- nearly 20 percent of the reservation-based Native Americans in the U.S. are Navajos. Our people are young; 50 percent of Navajos are under 21. Our average age is 17.5 and we are growing rapidly at 3 percent per year, three times the national average. Unfortunately, our economic circumstances continue to lag behind other citizens in the U.S. The average per capita income level of a Navajo is $2,400 -- 72 percent below that of citizens living in surrounding states. Additionally, our unemployment rate hovers between 30 and 40 percent.

Housing is one of the most critical problems facing Indian people in this country. Native Americans reside in dwellings that would be unacceptable in any other region of the country. The following data should illustrate the magnitude of the housing problems on our reservation; 54 percent of houses have incomplete indoor plumbing, 51 percent of houses have no indoor plumbing, 77 percent of houses have no central heating system and 46 percent of homes have no electricity. In a society as rich as ours, these figures are a national disgrace.

Since passage of the Housing Act of 1937 it has been the policy of the U.S. Government to provide housing opportunities to all of its citizens. Housing should not be a privilege; it must be a right of all citizens of the U.S. to live in a decent home. The Navajo Nation recognizes that the current situation is not limited to Native Americans, but has become symptomatic of housing conditions in the U.S.

The conditions all across Indian country are similar to those on our reservation. Figures derived from the comprehensive Indian Housing Inventory completed by the Bureau of Indian Affairs indicated that 92,970 Indian families are in need of assistance. Over 53,000 Indian people require new homes, and 40,000 require renovation. On the Navajo reservation alone, over 20,000 new units are required and 25,000 homes need to be renovated. Additionally, our quickly growing population and average age of 18 will drive the need for additional units of housing.

In spite of this demonstrated need for housing on the Navajo reservation and throughout Indian country, the Department of Housing and Urban Development has proposed to provide funding for 1,000 Indian housing units. For several years the Administration has simply requested no funding for this function. Additionally, the HUD budget proposes to rescind any recaptured units. For the last two or three fiscal years, Congress has utilized a recapture-reuse provision. This means that funding for Indian housing units that could not be used on one reservation for whatever reason, was to be diverted to another housing authority and not revert back to the federal treasury. Last year the recapture-reuse provision allowed Navajo to secure funding for several hundred extra housing units on the reservation. We strongly urge this committee to oppose the Administration's proposal to rescind any recaptured units. Indian people need these units more than the federal treasury.

The Navajo Nation recognizes the fiscal restraints imposed on the appropriations subcommittees by the on-going federal deficit and the bipartisan summit agreement reached last year by the Congress and the White House. However, if there is a need going unmet in this country, that cries out for federal assistance, it is Indian housing. Under the Administration's proposal, it would take 50 years to meet the housing needs of Indian people if demand did not grow. Of course, the growing service population precludes that possibility. If a dent is going to be made in this problem, 5,000 units a year need to be funded. This will bring down the number of units required to meet the housing needs of Indian people.

CONCLUSION

Mr. Chairman, Members of the Committee, thank you for the continued support of the Indian Housing Program. However, a great deal needs to be done if we are to meet the housing needs of Indian people and mitigate the unacceptable conditions in which Indian people continue to live.

STATEMENT OF SOCIETY OF REAL ESTATE APPRAISERS

Thank you for the opportunity to testify on the FY 89 budget request of the Federal Emergency Management Agency (FEMA). By way of introduction, the Society of Real Estate Appraisers is an independent national professional organization with over 18,000 members and 186 Chapters across the country. The Society provides users of appraisal services with professional appraisers who are bound by a strict code of ethics and are qualified for any valuation assignment. We are especially appreciative of this opportunity at this time because many of our members have expressed concerns on a narrow but current issue, namely, the fee charge system that the Federal Insurance Administration is implementing on a trial basis and the impact this project will have on its budget.

As you may know, The Federal Insurance Administration has recently begun charging a fee for flood maps distributed to the general public. Federal, state, and local governments, lending institutions, insurance agents, insurance brokers, and Write Your Own Insurance Companies are exempt from this policy. Appraisers and others who rely on information provided by flood maps are not exempt, yet they are required by the Federal Housing

Administration, other Federal agencies, and by federally-chartered organizations such as Freddie Mac and Fannie Mae, to refer to FEMA flood maps in their appraisal assignments. The necessity of the charge is questionable in light of the fact that the Flood Insurance Program is currently self-supporting.

FEMA's attempt to better manage the costs associated with the distribution of flood maps is laudable indeed. I point out, however, that excluding appraisers may not lessen the program's costs at all. Real costs may actually increase because the large majority of the appraisers' clients are lending institutions or other exempt entities. Undoubtedly the program will receive additional requests for maps from exempt entities which work with appraisers and who will supply appraisers with maps. Not only will those requests reflect an increase in the program's cost projections, but the additional steps required of FEMA in denying appraisers free maps may prove to negate any savings the program may have otherwise realized. The costs (mailings, personnel, follow-up, and review) of denying an appraiser access to free maps may be substantial as can be gleaned from the attached form which FEMA returns to a non-exempt requestor.

Access to relevant data, such as flood maps, is crucial to the professional appraiser. Delays and additional fees paid for such data serve only to attenuate the process home buyers must go through in the purchasing of homes. It is the consumers and users of appraisal services who should be considered when determining FEMA policy such as this. Appraisers committed to professional delivery of appraisal services and whose clients are required by Federal agencies to have reference to flood maps should have equal access to those maps.

FEMA has indicated that a review of this fee charge policy will take place within a year. Consideration to the points made in this testimony should be considered in reviewing that policy.

The Society stands ready to assist the Subcommittee on this and other issues relevant to appraisal policies or practices within its jurisdiction.

Thank you.

CONSUMER PRODUCT SAFETY COMMISSION

PREPARED STATEMENT

Senator PROXMIRE. The Consumer Federation of America has requested that the following statement be included in the hearing record. Without objection, so ordered.

[The statement follows:]

STATEMENT OF THE CONSUMER FEDERATION OF AMERICA

My name is Susan A. Weiss. I am Legislative Representative for the Consumer Federation of America. CFA represents over 240 local, state and national consumer organizations with a combined membership of more than 50 million people. We appreciate the opportunity to submit a statement for the record on FY 1989 funding for the Consumer Product Safety Commission.

In brief, we find the Administration's CPSC funding request of $32.9 million to be short-sighted, if this agency is to have the ability to carry out its mandate for product safety. We strongly urge that this subcommittee:

(1) reinstate the $3.2 million the CPSC had requested in its original 1989 budget submission, but slashed at the direction of the Office of Management and Budget;

(2) provide additional funds of at least $500,000 to continue indoor air quality research at CPSC; and

(3) include in the 1989 budget funds adequate for the agency to implement all-terrain vehicle safety requirements.

The CPSC is a small, but critical agency. With jurisdiction over more than 15,000 products in the marketplace, CPSC has a disproportionate impact on consumer health and safety and is probably the best bargain for the American taxpayer. Americans count on CPSC to assure a safe marketplace. Simply put, if the CPSC fails to respond to product hazards, there is no other federal agency that will.

Yet the CPSC has been among the most ravaged of agencies in recent years -- with a nearly 30% reduction in funding and nearly 40% reduction in personnel since 1981. In fact, it has significantly less than one half of the available resources it had in 1974. (see attachment I). Nonetheless its responsibilities and mandate remain unchanged.

Failure to restore the cuts identified above and to earmark additional monies for indoor air quality and ATV safety means a continued and critical threat to this nation's safety. And this is costly, because more than 20,000 Americans lose their lives and more than 3 million suffer disabling injuries every year, due to household products.

In May of 1987, CFA released a report entitled "The CPSC: Guiding or Hiding From Product Safety?". A detailed look at the Commission since its last reauthorization in 1981, this study revealed an agency retreating from effective product safety rather than advancing it. The report found a disturbing record of CPSC foot-dragging with respect to hazardous products, and a consequent cost of thousands of lives and tens of thousands of serious injuries, as well as billions of dollars in health care costs and lost wages.

As a result, CFA has been working closely with the authorizing committees to strengthen the regulatory and administrative practices of the CPSC to assure more effective and timely response to product hazards. Subject to Congressional scrutiny and public pressure, the CPSC has slowly but finally begun to respond. It is precisely for this reason that CFA strongly urges this subcommittee to begin to revitalize the agency, not further undermine it.

Yet the Administration's proposed budget of $32.9 million would do just that. It represents a 10% reduction in the amount even the CPSC itself originally voted to request from Congress to meet the priorities determined by the Commission. And this is a CPSC which in recent years has consistently requested less than needed to do its job. The CPSC had originally sought $36.1 million, but acceded to OMB direction and slashed the request by nearly $3.2 million. We have attached a CPSC memorandum reflecting the proposed reductions. (see attachment II).

Although the amounts of the respective cuts may appear small, their relative impact -- individually and cumulatively -- on this agency and the American consumer is certainly significant. Any fat that existed at this agency has long ago disappeared. Any and all reductions now go straight to the heart of the Commission's ability to respond to product hazards and to provide adequate safety information to the American consumer.

This is most evident in the CPSC program that defines its very mandate: Hazard Assessment and Reduction. This program analyzes product hazards and their causes, evaluates how to reduce the risks they pose, and develops safety standards. Hardest hit within this program has been the contract authority to conduct the actual studies on product hazards.

In 1988, the overall program was slashed by nearly 20%, most of this contract funds. Hazard program contract support was decimated: plunging from $1.8 million in 1987 to $303,000 in 1988 and now proposed at $254,000 for 1989. To begin to reverse the downward trend in product safety at this agency, all contract funds excluded in response to OMB must be reinstated. Otherwise, the budget:

-- eliminates all contract money requested to determine how to reduce the over 500,000 annual injuries from bicycles -- a figure that has essentially remained constant over the 10 years since the current standard was promulgated;

-- deletes all but $20,000 of the $240,000 contract money earmarked to reduce injuries and deaths from riding mowers. In 1986 alone, an estimated 18,000 serious injuries were associated with these mowers, as well as 75 deaths annually; and

-- slashes even the $200,000 in contract authority for work on ATVs, with the death toll now reaching nearly 1000 and injuries exceeding 350,000.

If the current CPSC budget proposal prevails, these and other key safety projects will be severely handicapped, if not simply scrapped. Delay or deletion of these efforts translate directly into continued and needless injuries and deaths.

Indoor Air Quality

Most disturbing in its long range impact on consumer health and safety is CPSC's total abandonment of any contract funds for indoor air quality. Although the Commission has designated indoor air quality a priority project for fiscal year 1989, it has failed to request any money for research and has eliminated funds requested for consumer information. This is particularly disingenuous because the Commission now has only designated two priority projects for 1989, and designation of a priority project means that the project should be fully funded and should be placed on a faster track.

Indoor air pollutants, other than radon, are responsible for 3500 to 6500 cancer deaths each year. And it is the CPSC which has primary responsibility for thousands of products in the home which are sources of exposure, including: combustion appliances; household chemicals; building materials, particularly formaldehyde; and other organic chemicals. Yet in 1988 there is no indoor air research money and none is sought for 1989.

Consistent with past Congressional recognition of the importance of indoor air quality, we urge the specific inclusion again of additional funds for indoor air research for FY 1989. Although CFA advocates full funding for the indoor air research program, we ask that the subcommittee provide a minimum of $500,000 which is necessary just to enable the CPSC to (1) continue mitigation and evaluation of biological aerosols, particularly in the schools, as part of the ongoing effort initiated with the funds appropriated in 1987, and (2) begin work on acid aerosols and mutagenic particles from kerosene heaters. This represents a fraction of the approximately $2 million the CPSC had in past years when indoor air quality was also a priority project.

To comply with OMB reduction directives, the CPSC has also now expressly deleted the only money it had earmarked for indoor air quality: $200,000 in contract authority to produce practical guides for the consumer on how to assess and decrease indoor air pollution and asbestos in the home. Consumers need this information; without it, this nation is unlikely to see a reduction in costly chronic exposure to indoor air pollutants in the home anytime soon.

The paralysis that would be generated by the current budget proposal must be precluded. Although the following represent relatively small amounts of public spending, they in fact return large dividends to America's taxpayers -- in lives saved, injuries prevented and expenditures reduced for health care and lost productivity. Specifically, we ask that this subcommittee:

(1) restore to the agency's 1989 budget the additional $3.2 million originally sought by the Commission in order to carry out the priorities identified for 1989, and

(2) to provide funds for indoor air quality research in the amount of at least $500,000.

All-Terrain Vehicles

Finally, we are concerned that neither the current nor the original budget requests include additional funds to implement the terms of the consent decree just entered by the Court addressing all-terrain vehicles. If the staff estimate for an additional $1.53 million is accurate, adequate supplemental monies must be granted. This agency cannot afford -- nor be allowed -- to drain funds from its other product safety initiatives to accomplish the terms of the decree.

An April 20, 1988 memorandum to the Commission suggests the impact on other safety projects without supplemental ATV monies, including termination of key work on chain saws (non-kickback injuries alone were estimated at 39,000 in 1985), cords and plugs (responsible for an estimated 10,000 fires and 140 deaths in 1985), power saws (responsible for an estimated 41,000 injuries in 1986), as well as other hazard projects. (see attachment III).

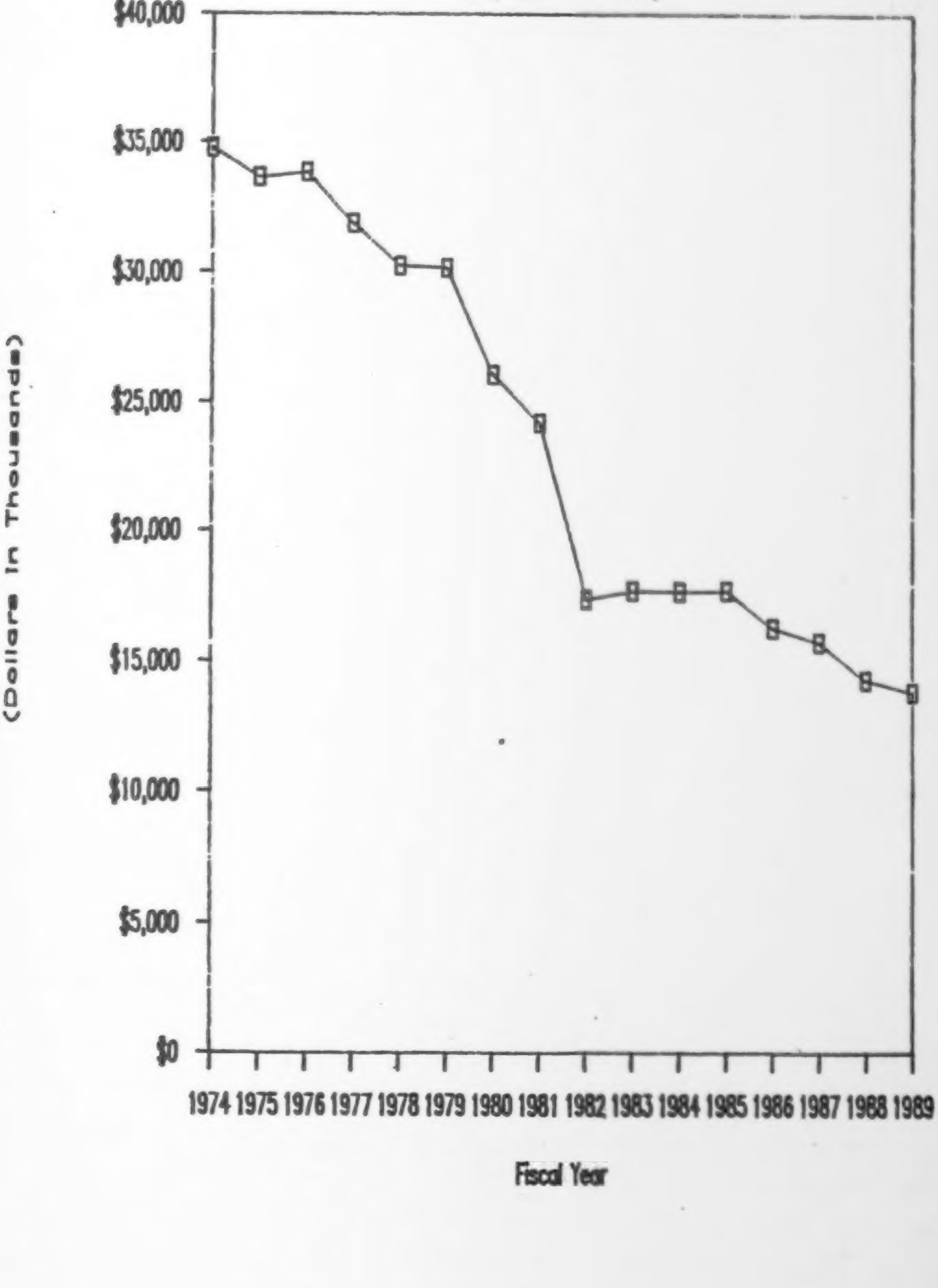
We strongly urge this subcommittee to preclude such a response by the agency and to consider supplemental resources for the agency to carry out its mandate with respect to all-terrain vehicles. If the agency is permitted to institute the cuts outlined in the April 20 memorandum, there will no longer be a Consumer Product Safety Commission, only an ATV Safety Commission.

ATTACHMENT I

CHART III

CPSC FUNDING HISTORY - 1974-1989

(Adjusted for Inflation)



ATTACHMENT II

1989 OMB Mark
Reduction Plan
(dollars in thousands)

	Amount	FTEs
September Budget Request	$36,100	521
Reductions		
A. 1988 Congressional Action		
Media Relations	---	-2
General Counsel	---	-2
Chairman's Office	---	-1
Executive Director's Office	---	-1
Subtotal	---	-6 1/
B. Salaries		
Revise FERS estimate based on updated assumptions	-994	---
Reduce pay raise requirment to 2%	-187	---
Overtime (reduction to $100K)	-40	---
Subtotal	-1,221	---
C. Contracts		
NEISS cost reduction ($530K remaining)	-120	---
Computer utilization cost reduction	-100	---
ATV work completed	-200 2/	---
Publication distribution at 1988 level ($175K remaining)	-25	---
PSAs at 1988 level ($159K remaining)	-50	---
Toxicity support ($32K remaining)	-15	---
Economics special studies ($20K remaining)	-20	---
State/local contracts ($275K remaining)	-25	---
Ongoing/seasonal ($13K remaining)	-22	---
Planning/evaluation ($35K remaining)	-40	---
Bicycles	-75	---
Riding Mowers (1988 contract restoration to be given first priority; $20K remaining)	-220	---
IAQ	-200 3/	---
HS Lab equipment (placed on wish list)	-20	---
Subtotal	-1,132	---

1/ Three OIPA FTEs have already been redistributed.

2/ $50K to be planned as a reserve

3/ Funds to be placed on wish list if still required; project remains a 1989 priority.

	Amount	FTEs
D. Operating Costs		
Reduce Hotline phones, as in 1988.........	-$77	---
Reduce travel to $500K ($375K in 1988)....	-133	---
Reduce printing to $200K ($129K in 1988)..	-62	---
Reduce Field rent to new GSA estimate.....	-64	---
Reduce OIPA, FO supplies to new 1988 level	-50	---
Reduce equipment purchases by 60% ($49K remaining)......................	-73	---
Subtotal.......................	-459	---
E. Common Costs		
Reduce HQ rent to new GSA estimate........	-144	---
Reduce postage to 1988 +10%...............	-59	---
Reduce telephone costs to 1988 +5%........	-75	---
Reduce printing to $200K ($180K in 1988)..	-40	---
Reduce training to $50K ($10K in 1988)....	-27	---
Reduce office automation equipment ($40K remaining; none in 1988)..........	-11	---
Reduce PCS to $25K (none in 1988).........	-15	---
Subtotal........................	-371	---
Increases		
Playground Equipment (1.0 EPI, 0.5 ENG)........	---	+1.5
Riding Mowers, in-house work (ENG).............	---	+0.5
Compliance HQ position added in 1988...........	---	+1
Freedom of Information (restores 1989 OS reduction)...............................	---	+1
Subtotal.......................	---	+4
TOTAL................	$32,917	519

ATTACHMENT III

UNITED STATES GOVERNMENT

U.S. CONSUMER PRO
SAFETY COMMIS
WASHINGTON, D.C. 2

Memorandum

APR 20 1988

TO: Commission
THROUGH: Sadye E. Dunn, Director, Office of the Secretary
THROUGH: James V. Lacy, General Counsel
THROUGH: Leonard DeFiore, Executive Director
THROUGH: Douglas L. Noble, Director
Office of Program Management and Budget (OPMB)

FROM: Richard Kopanda Rich Kopanda
Budget and Planning Officer, OPMB

SUBJECT: All-Terrain Vehicle (ATV) Resource Estimates

At our March 31 briefing on ATV options, the Commission was informed that staff would refine the cost estimates to carry out the final consent decre and the notice of proposed rulemaking (NPR), and return for a later decision regarding how to proceed. This briefing package, for the April 27 Commission decision meeting, includes revised tables showing the cost of the consent decree (Table 1), the NPR (Table 2), and proposed 1988 and 198 budget tradeouts if we are required to absorb the cost of these actions (Table 3). A brief synopsis of the activities to be conducted is included below.

Our assumption is that the final consent decree will be approved in its present form and it will be supported as our first priority. Thus, available ATV resources for any office or directorate are first applied to the consent decree, with any remaining time or contract dollars allocated to NPR activities. After further review of their differing needs, we have concluded that the individual costs of the consent decree and NPR would simply be additive if the two were pursued simultaneously. Small amounts of unbudgeted directorate staff time (less than one FTE) will be internall absorbed, and are not shown as a shortfall problem.

In summary, the consent decree is still expected to require only a moderat resource commitment each year, about $500,000 including staff costs. The 1988 costs can largely be covered, while in 1989 and the outyears less tha $200,000 in contract funds would be needed for monitoring. If necessary, these funds would be derived by restricting overtime, reducing operating costs, and redirecting some State and local contracts (Table 3). The 2 FT shortfall in the Office of General Counsel (OGC) in 1989 could only be mad up by requesting approval from Congress to increase the office's ceiling b internally reallocating staff time.

Promulgating a rule poses a much larger problem, especially if combined with the final consent decree as is likely. Alone it would require over $1.5 million of our resources in 1989, and well over $2 million with the final decree. Epidemiology would be short by 2 FTEs this year and 6 in 1989; in addition, Economics and the Field would each be short by one FTE in 1989. Perhaps the most outstanding problem is the $824,000 in contract

NOTE: This document has not be
viewed or accepted by the Comm

funds necessary in 1989, or $1,020,000 if combined with the consent decre As Table 3 shows, even the best plan for absorbing them could be considere less than viable. In lieu of eliminating all hazard contracts, we propos to terminate temporary employment, along with further reductions in operating and common costs.

We are assuming that you will want the staff to implement the consent decree once it is signed using the resources identified. We are now seeking decisions in the following four areas:

1. Should we actively pursue an NPR? We would use either the accident reconstruction method, if successful, or an alternative approach if necessary or preferable.

2. If so, should work begin immediately, only if the voluntary standard effort is terminated without success, or at some specified future time?

3. If so, should a formal budget amendment for an additional 10 FTEs and $1,020,000 in contract funds be transmitted to Congress to obtain additional 1989 funds? This approach is recommended by the staff.

4. If not, should either a formal budget amendment or informal contact be made with Congress to address the additional 1989 contract and OGC staff needs for the final consent decree? This approach is recommended by the staff.

A further explanation of the proposed activities follows.

FINAL CONSENT DECREE

Implementing the final consent decree will require intensive review of its safety provisions in 1988 and 1989, along with continuing injury analysis and monitoring of industry's compliance with the specific provisions. The Office of General Counsel, Directorate for Epidemiology (Division of Human Factors), and Office of Information and Public Affairs staff will be involved in testing proposed product labels, reviewing ATV manuals and later changes and supplements, reviewing point-of-purchase information, and monitoring the media and marketing plan proposed by the manufacturers. Most of this effort will be split between 1988 and 1989, and will involve contract funds for experts in selected areas.

The training structure and curriculum required by the decree will not be implemented as soon as the other safety provisions, so we envision most of our work occurring in 1989. We also expect to hire experts to assist in evaluating the training component. State and local contracts will be used to monitor compliance with the training provisions, as well as other aspects of the consent decree which involve on-site visits to dealers. Compliance activities which will begin in 1988 include monitoring the marketing prohibitions, marketing and sales to inappropriately aged users, the toll-free hotline, and use of posters in dealers' showrooms. In 1989 and beyond, compliance work will be expanded to include all other aspects of the agreement. Contract staff will also monitor State legislatures for violations of the anti-lobbying provision.

Voluntary standard work will begin when the decree is approved by the court and continue throughout most of 1988. It is likely that agreement on a standard will not be reached this year and that the effort will carry over to early 1989.

Notice of Proposed Rulemaking

The resource estimates support development of the substantial evidence required for an NPR. This evidence is planned to provide injury reduction estimates based on an injury survey to support the principal parts of the proposed draft performance standard. A necessary component of the injury survey will be to develop very detailed information on accidents by conducting a series of accident reconstructions to determine how many injuries might have been addressed by the provisions of the performance standard.

The resource estimates for the injury survey are predicated on the success of an accident reconstruction pilot study which will assess the feasibility of obtaining the required evidence. If successful, the injury reduction and cost/benefit estimates required by Section 9 of the Consumer Product Safety Act could be developed for the lateral stability or the suspension, or both, of the proposed performance standard. If this approach is not successful, then it is unlikely that the detailed injury reduction estimates sought can be developed through accident reconstruction, and an alternative approach to obtaining the evidence would be required. Therefore, the staff is currently exploring alternatives to present to the Commission in the event that they should be necessary or preferable. In the meantime, the staff is pursing the accident reconstruction plans because of the critical seasonal timing required to gather recent accident data through an injury survey.

The staff would undertake an injury survey from August, 1988 to May, 1989 in which approximately 600 telephone interviews would be conducted. Of these, an estimated 20 in-depth investigations would be conducted by Commission staff, and an estimated 70 accident reconstructions would be conducted by contract with assistance by CPSC staff. This effort would be completed in August, 1989. Staff review, data reduction, and analysis would occur during 1989 and 1990. Reports would be written by October of calendar year 1990 (fiscal year 1991).

An exposure survey would be prepared in 1988 and completed in 1989, with a final report prepared in 1990. The exposure survey would be coordinated with the injury survey. Analysis for regulatory findings would be conducted in 1989 and 1990.

Engineering tests and analyses would continue in 1988. Technical programs would continue in 1989, with the goal of completing them in 1990. Emphasis would be placed on transient steering, tire characteristics, and computer modeling. The target goal for publication of the NPR would be late 1991. Staff would continue to participate in the development of a voluntary standard and provide an evaluation if the ATV industry developed one.

TABLE 1

FINAL CONSENT DECREE

	Total Cost			Currently Budgeted 1/		Shortfall	
	FTEs	Contracts	Total	FTEs	Contracts	FTEs	Contra
1988							
A. Safety Provisions							
Test/review labels, manuals:							
OGC	1.6	$30	$110	1.6	$30	--	--
EPI	0.4	--	20	0.4	--	--	--
Review training curriculum, structure:							
FIELD	0.1	--	5	0.1	--	--	--
OGC	0.2	10	20	0.2	10	--	--
EPI	0.1	--	5	0.1	--	--	--
Review media and marketing:							
OIPA	0.1	10	15	0.1	10	--	--
OGC	0.2	10	20	0.2	10	--	--
B. Data Analysis:							
EPI	2.4	--	120	2.4	--	--	--
C. Compliance Monitoring:							
FIELD	--	59	59	--	59	--	--
CA	0.1	--	5	0.1	--	--	--
OGC	0.1	--	5	0.1	--	--	--
D. Voluntary Performance Standard:							
ENG	2.0	--	100	2.0	--	--	--
ECON	0.3	--	15	0.3	--	--	--
OGC	0.1	--	5	0.1	--	--	--
TOTAL, 1988	7.7	$119	$504	7.7	$119	--	--
1989							
A. Safety Provisions							
Test/review labels, manuals:							
OGC	1.7	$10	$95	--	$10	1.7	--
EPI	0.6	--	30	0.6	--	--	--
Review training curriculum, structure:							
FIELD	0.3	35	50	0.3	5	--	$30
OGC	0.2	25	35	--	25	0.2	--
EPI	0.7	--	35	0.7	--	--	--
Review media and marketing:							
OIPA	0.1	10	15	0.1	10	--	--
OGC	0.2	--	10	0.2	--	--	--

1/ Some FTEs to be used on the project were not budgeted for this purpose, but will be absorbed.

	Total Cost			Currently Budgeted 1/		Shortfal	
	FTEs	Contracts	Total	FTEs	Contracts	FTEs	Cont
B. Data Analysis:							
EPI	2.4	--	$120	2.4	--	--	--
C. Compliance Monitoring:							
FIELD	0.1	$166	171	0.1	--	--	$16
CA	0.1	--	5	0.1	--	--	-
OGC	0.1	--	5	0.1	--	--	-
TOTAL, 1989	6.5	$246	$571	4.6	$80	1.9	$19
OUTYEARS							
A. Safety Provisions:							
OGC	0.5	--	$25	0.5	--	--	--
EPI	0.5	—	25	0.5	—	—	—
B. Data Analysis:							
EPI	2.5	--	125	2.5	—	—	—
C. Compliance Monitoring:							
FIELD	0.1	166	171	0.1	—	—	$166
CA	0.1	—	5	0.1	—	—	—
EPI	0.5	—	25	0.5	—	—	—
OGC	0.1	—	5	0.1	—	—	—
TOTAL, OUTYEARS	4.3	$166	$381	3.8	—	—	$166

1/ Some FTEs to be used on the project were not budgeted for this purpose, but will be absorbed.

TABLE 2

NOTICE OF PROPOSED RULEMAKING

	Total Cost			Currently Budgeted 1/		Shortfal	
	FTEs	Contracts	Total	FTEs	Contracts	FTEs	Cont
1988							
A. Injury Survey:							
EPI	1.9	$89	$184	--	$89	1.9	-
ECON	0.1	--	5	0.1	--	--	-
FIELD	0.4	6	25	0.4	6	--	-
ENG	0.4	--	20	0.4	--	--	-
HS	0.2	7	17	0.2	7	--	-
B. Economic Analysis:							
ECON	0.3	--	15	0.3	--	--	-
C. Standard Development:							
ENG	3.3	225	390	3.3	225	--	-
CPMS	0.8	--	40	0.8	--	--	-
OGC	0.1	--	5	0.1	--	--	-
TOTAL, 1988	7.5	$327	$702	5.6	$327	1.9	-
1989							
A. Injury Survey:							
EPI	6.1	$340	$645	--	--	6.1	$34
ECON	0.1	--	5	0.1	--	--	--
FIELD	1.2	19	79	--	--	1.2	1
ENG	0.6	--	30	0.6	--	--	--
HS	0.6	75	105	0.6	--	--	7
B. Economic Analysis:							
ECON	0.9	60	105	0.4	--	0.5	6
C. Standard Development:							
ENG	3.3	300	465	3.3	--	--	30
CPMS	0.8	--	40	0.8	--	--	--
ECON	0.5	--	25	--	--	0.5	--
OGC	0.3	--	15	0.3	--	--	--
D. Awareness Survey:							
OIPA	0.1	30	35	0.1	--	--	3
TOTAL, 1989	14.5	$224	$1,549	6.2	--	8.3	$824

1/ Some resources shown as budgeted are unplanned but being absorbed.

	Total Cost			Currently Budgeted		Shortfall	
	FTEs	Contracts	Total	FTEs	Contracts	FTEs	Contra
1990							
A. Injury Survey:							
EPI	3.3	--	$165	--	--	3.3	--
ECON	0.1	--	5	0.1	--	--	--
B. Economic Analysis:							
ECON	1.0	--	50	1.0	--	--	--
C. Standard Development:							
ENG	3.3	100	265	3.3	--	--	$100
CPMB	0.8	--	40	0.8	--	--	--
CA	0.1	--	5	0.1	--	--	--
TOTAL, 1990	8.6	$100	$530	5.3	--	3.3	$100
OUTYEARS							
A. Injury Survey:							
EPI	0.8	--	$40	--	--	0.8	--
B. Compliance Monitoring:							
CA	0.3	--	15	0.3	--	--	--
TOTAL, OUTYEARS	1.1	--	$55	0.3	--	0.8	--

TABLE 3

PROPOSED BUDGET TRADECUTS IF BUDGET AMENDMENT IS NOT REQUESTED

	Tradecut
1988	
Consent Decree	None
Notice of Proposed Rulemaking:	
Epidemiology staff time (2 FTEs)	Terminate Epidemiology work on Chain Saws, Electric Fans, and Bicycles for remainder of
1989	
Consent Decree:	
General Counsel staff time (2 FTEs)	Temporary assignment of unfilled Field vacancies
Contract resources ($196,000)	Redirect State and local contracts ($45,000), restrict overtime as in 1988 ($60,000), reduc operating costs by 5% ($91,000).
Notice of Proposed Rulemaking:	
Epidemiology staff time (6 FTEs)	Terminate EPI involvement in 5 hazard project (Power Saws, Electric Fans, Bicycles, Fire Ri Assessment, Cords and Plugs).
Economics staff time (1 FTE)	Terminate ECON involvement in same projects, except Bicycles.
Field staff time (1 FTE)	Reduce Field time in Section 15 from 37 to 36 and Regulated Products by 0.5 FTEs each
Contract resources ($824,000)	Eliminate all temporary, summer, and stay-in school employees ($595,000) Further reduce operating costs to 5% below 1988 level ($104,000) Reduce common costs to 5% over 1988 level (equipment purchases, training, permanent change of station, etc.) ($125,000)

FEDERAL EMERGENCY MANAGEMENT AGENCY

PREPARED STATEMENT

Senator PROXMIRE. Finally, a statement received from the International Association of Fire Chiefs will be inserted in the hearing record at this point.

[The statement follows:]

STATEMENT OF THE INTERNATIONAL ASSOCIATION OF FIRE CHIEFS

The International Association of Fire Chiefs (IAFC) is pleased to submit this statement to this Committee, with regard to the Fiscal Year 1989 Appropriation Hearing on the Federal Fire Prevention and Control Act. The IAFC is a professional association, representing nearly 10,000 Fire Chiefs and chief officers, responsible for the provision of fire protection and emergency medical service for approximately 40% of the nation's population.

The IAFC is extremely disappointed and frustrated to have to again submit to this Subcommittee a request for the reinstatement of program funds for the U.S. Fire Administration and the National Fire Academy, which have been eliminated from the Federal Emergency Management Agency's budget for Fiscal Year 1989.

The FEMA FY89 budget request reduces the National Fire Academy stipend program and totally eliminates the Fire Prevention and Arson Control Programs of the U.S. Fire Administration, a total of $3.9 million and at least one staff position. Every year, since 1982, the Federal Fire Programs, including the National Fire Academy, the U.S. Fire Administration, and the Center for Fire Research, have been cut and reduced to token levels. The FY89 FEMA budget budget has increased over last year, yet the Fire Programs are not simply kept at level funding, they are reduced.

America still suffers from an unacceptable fire death problem. The 1987 New Year's Day hotel fire at the Dupont Plaza in Puerto Rico took the lives nearly 100 resort guests. We are now seeing fire fatalities in homeless shelters and boarding houses. In Washington D.C., there have been several fires in those occupancies which have taken the lives of several adults and children.

The economic impact of fire on local communities is equally as staggering. According to the National Fire Protection Association, there were 352 large loss fires in the United States in 1986, in this case defined as fires causing in excess of $1 million in property loss, that accounted for a total loss of $897 million. Many of these fires occured in manufacturing plants, offices, and educational facilities resulting worker displacement and economic costs to the local community.

A continued strong federal focus, through the U.S. Fire Administration and the National Fire Academy, can continue to help bring improvements in building and life safety standards, public education and awareness, and in the ability for the fire and emergency services to respond to those emergencies.

This nation is served by an estimated 32,000 fire departments, staffed by over a million firefighters, both career and volunteer men and women who risk their lives in responding to emergencies of all types, every day. As providers of emergency service, the fire service is on the front line protecting not only the public, but the themselves and the environment, from further harm. Issues that are gaining attention now, like hazardous and toxic chemicals, and infectious diseases are of major concern to the local government and the local fire service. However, as issues, they transcend local, state and even international boundaries. These are not the problems of the fire service, these are "our" problems.

The National Fire Academy, has done much for this nation's fire and public safety service, and in turn the citizens they serve, in terms of contributing to the development of new life saving technology, improving the quality fire service operations and administration, fire prevention, and the health and safety of emergency responses personnel. It has provided for much needed improvements in our profession. The training and education at the Academy prepares fire officers to better deal with the challenges ranging from a routine inner city apartment fire, to a major high rise hotel fire, to a wildland fire that crosses several states. Obviously, these improvements go beyond the effective delivery of manual fire suppression. The fire services at the local level are more active in prevention and public education, they are responding to and managing hazardous materials incidents far better than before, and we are seeing vast improvements in organizational management through application of computer technology and proven management skills. The bottom line is, the fire service is reducing the life and property loss of the general public and reducing the fire fighter death rate. But help is needed. The elimination or reduction of the National Fire Academy's stipend program will eliminate participation by the very firefighters who need it the most. The level of financial resources available to local government from the federal government has been cut so drastically that funds are almost non-existent. Yet, the federal government asks locals to do more and more. The most recent example is the emergency planning and response under the Title III provisions of Superfund. The Title III regulations will cost local governments and fire departments millions of dollars in order to comply with the requirements. The requirements under that program, although resulting in improving the knowledge about hazardous materials, will financially strap many fire departments because there is no funding from any source to support the implementation of the program.

The proposed FEMA budget, reduces the NFA student stipends by one-third, and is the first year of a three year planned phase-out, with the intent for local governments to take over those costs through "cost-sharing by local governments." To be sure, there will be no cost sharing, there will be simply be no students, with the exception of those that are within driving distance of Emmitsburg, Maryland. As an example, many communities in California limit municipal travel funds for out-of-state schools to only those senior managers in the local government. No matter how good the program is at NFA, and it is a solid program, the local government, cannot absorb the costs the stipend program covers.

If the intent of the administration is to share costs with local governments, the local governments should be given credit for the billions of dollars currently spent on responding to emergencies at the local level. The federal government does little to contribute to the financial support of local fire departments but still receives that local fire protection. If we wish to share costs, then the federal government should recognize its impact on local government. In a recent fire in Fullerton, California, 16 homes were lost in one day from a brush fire that started on a nearby military reservation.

In the United States, nearly 6,000 Americans die in fires annually, most of them in their homes, most of them children and the elderly; these deadly fires are attributable to smoking materials, problems with heating devices; and arson. Arson that is not only used by those attempting to defraud the insurance industry, but also by juveniles. Some reports suggest that well over 50% of arson incidents are by juveniles. These cases are not simple trash and outside fires; many of these juvenile related fires result in multiple fatalities. The IAFC feels this is a significant national problem that deserves attention. No one local fire department alone can make an impact. However, given a federal focal point. progress is possible. The U.S. Fire Administration recently joined forces with the U.S. Justice Department to look at the juvenile arson problem. However, due to the proposed FY89 budget, that effort will never get off the ground.

The U.S. Fire Administration, through its Fire Prevention and Arson Control Program have contributed to the continued development of the Residential Sprinkler Program, which now helps protect the citizens in over 200 communities nationwide. There have been at least two dozen lives saved by this technology. That technology would not be in place now without the research supported by the US Fire Administration. Other effective programs that have been started and need to be continued include: the Juvenile Firesetter Counseling Program, which has helped local fire chiefs deal with ever rising juvenile firesetting problem; the Community Volunteer Fire Prevention Program, has helped start, not underwrite, some very effective local fire prevention and education programs; the USFA's Public Awareness Campaign and Sesame Street Fire Safety Programs, which have reached millions of Americans through radio and television.

In a recent Armed Services Committee hearing in the House of Representatives, Congressman Curt Weldon (PA) successfully proposed to allocate some 60 million dollars to improve the fire protection of naval vessels. There is something wrong when we come before you to ask to replace $3.4 million so that the total USFA budget can be elevated to a little over $6 million, and at the same time, in one hearing, Congress allocated $60 million to improve the fire safety of US naval vessels. We recently heard a legislator refer to this administration as the compassionate conservatives. If there is anyone who deserves compassion in this country, it is our burned children and our destroyed homes and businesses. Is $10.00 per year per firefighter too much too ask our government to help in supporting our quest for a better quality of life?

The budgetary concerns discussed here are only part of the issue. Over the past 12 months FEMA, the parent agency of USFA and NFA has. in our view, expended funds intended by Congress for fire related programs on non-fire programs. These include salaries for personnel not on the staff of the U.S. Fire Administration or the National Fire Academy. It is important that in order to make maximum use of the limited fire program resources, they must be allocated as intended by Congress.

The IAFC strongly feels that there is a role for the federal government with regard to fire protection in the U.S. as outlined in 1972 by the National Commission on Fire Prevention and Control, established by the 93rd Congress, and reaffirmed by those who participated in the America Burning Revisited Conference this past November. We urge this Congress to restore the original $3.9 million requested for the U.S. Fire and Administration and the National Fire Academy, and direct FEMA to reallocate those funds, currently being spent in other program areas, back to fire programs as originally intended by Congress. Anything less would be a disservice to the over 1 million volunteer and career firefighters who serve this nation every day, and a disservice to the American public that they protect.

SUBCOMMITTEE RECESS

Senator Proxmire. This concludes our hearing. We want to thank you very much for your testimony and for your patience in waiting as long as you did. The subcommittee will stand in recess subject to the call of the Chair. Thank you.

[Whereupon, at 1:55 p.m. Tuesday, May 10, the subcommittee was recessed to reconvene at the call of the chair.]

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